JVC

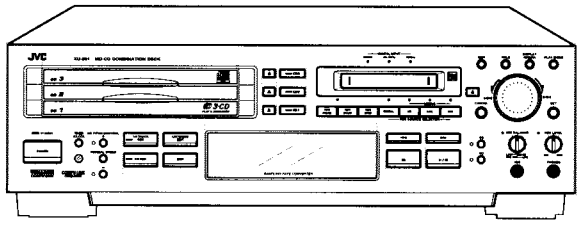
SERVICE MANUAL

MD-CD COMBINATION DECK

XU-301BK

COMPACT disc DIGITAL AUDIO TEXT

MD Mechanism EMU-401A
MD Optical Pickup KMS-260A
CD Traverse Mechanism VC3-2
CD Optical Pickup OPTIMA-150S
CD Signal Processor MN35510



COMPACT disc DIGITAL AUDIO

Mini Disc

COMPU LINK Component

TEXT COMPU LINK

Area Suffix

B ---------- U.K.
E ------ Continental Europe
J ---------- U.S.A.
EE --------- Eastern Europe
EN -------- Northern Europe
US ---------- Singapore
UT ---------- Taiwan
UB ---------- Hong Kong
U ---------- Other Areas

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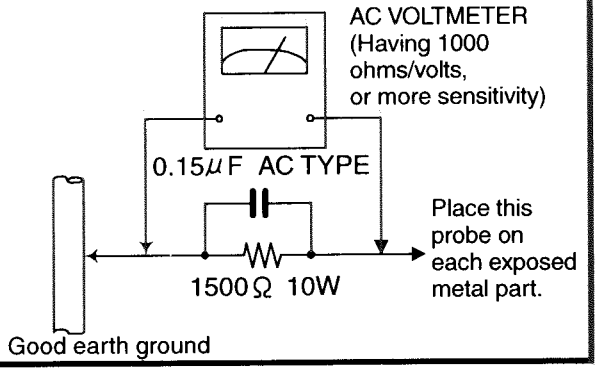
No.20677
Apr. 1998

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet , particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.)
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to eachexposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. voltage measured Any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

⚠ ***CAUTION*** **Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.**

Important for Laser Products

1.CLASS 1 LASER PRODUCT

2.DANGER : Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches whichprevent emission of radiation when the drawer is open and the safety interlocks have failed or are de feated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

---

* DHHS : Department of Health and Human Service

DHHS LABEL

US JVC CORP. 41SLTER DRIVE ELMWOOD PARK, NJ.07407
MANUFACTURED AT M.P.
Product complies with DHHS Rules 21CFR
Subchapter J in effect at date of manufacture.
MANUFACTURED
VND5001-002

1.CLASS 1 LASER PRODUCT

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5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

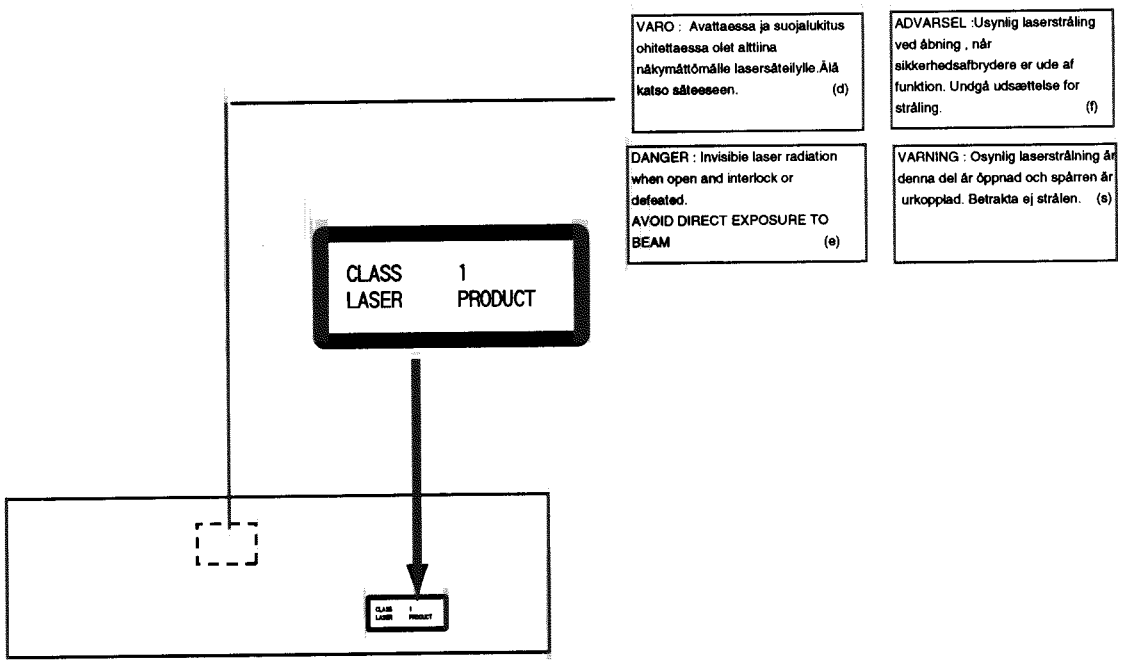
ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

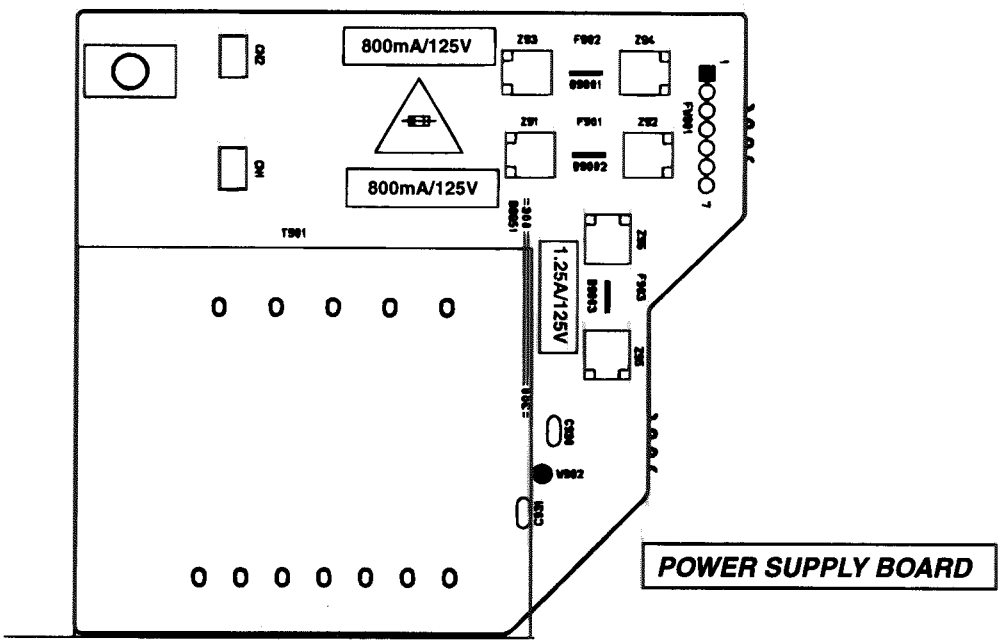
WARNING LABEL

(Except for U.S.A)

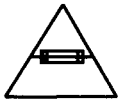

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen. (d)
ADVARSEL :Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (f)
DANGER : Invisibie laser radiation when open and interlock or defeated.
AVOID DIRECT EXPOSURE TO BEAM (e)
VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen. (s)
CLASS 1
LASER PRODUCT

XU-301BK Rear Panel

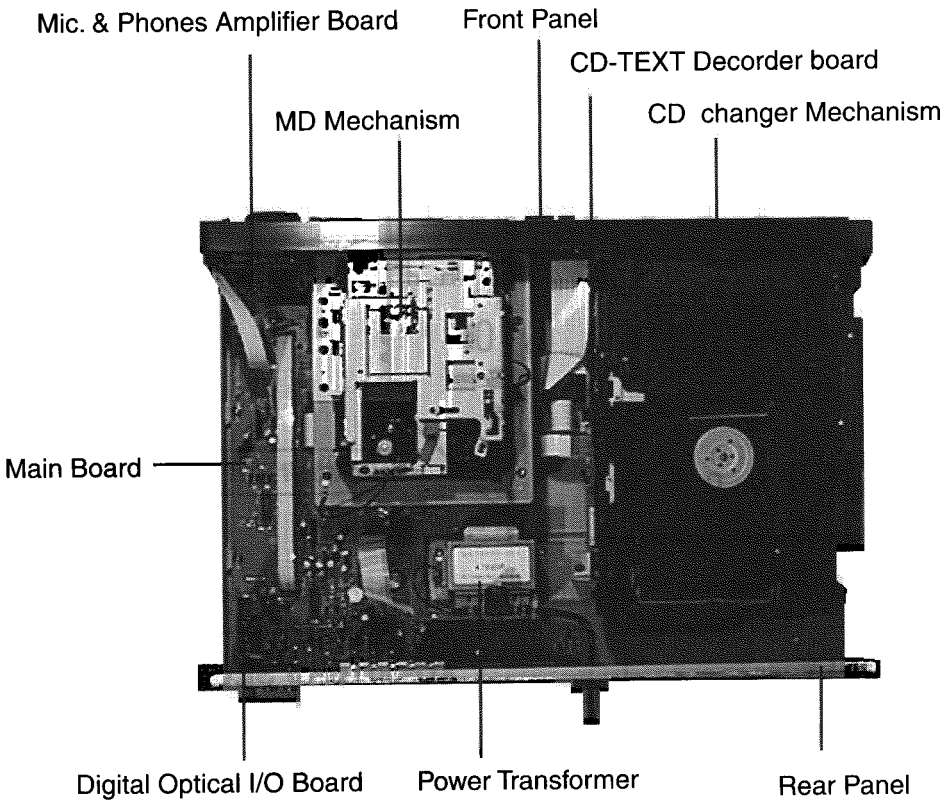
■ Importance Admistering point on the Safety

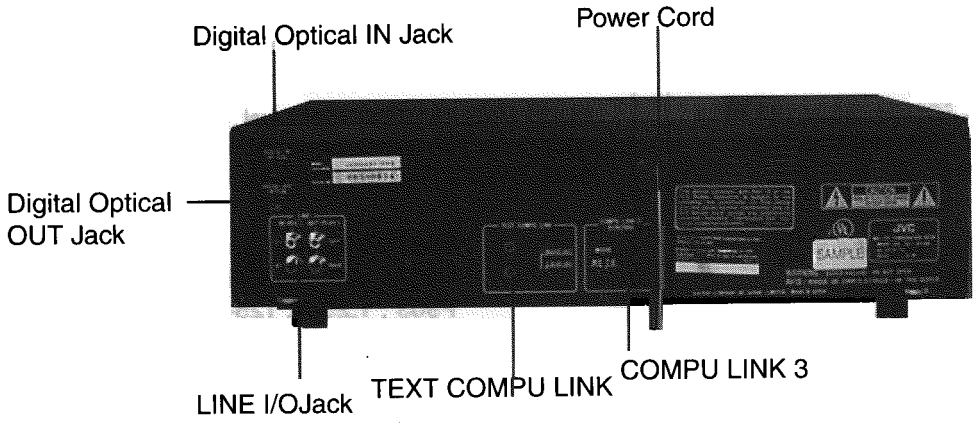


Note : It's means "J" for U.S.A. market model and "C" for canada market model.

XU-301BKJ ONLY	XU-301BKJ SEULEMENT
Full Fuse Replacement Marking Graphic symbol mark (This symbol means fast blow type fuse.)  should be read as follows ;	**Marquage Pour Le Remplacement Complet De Fusible** Le symbole graphique (Ce symbole signifie fusible de type á fusion rapide.) doit être interprété comme suit ;
FUSE CAUTION	**PRECAUTIONS SUR LES FUSIBLES**
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATING OF FUSES ; **F901 : 800mA, 125-V** **F902 : 800mA, 125-V** **F903 : 1.25-A, 125-V**	**POUR UNE PROTECTION CONTINUE CONTRE DES RISQUES D'INCENDIE, REMPLACER SEULEMENT PAR UN FUSIBLE DU MEME TYPE ;** **F901 : 800mA, 125-V** **F902 : 800mA, 125-V** **F903 : 1.25-A, 125-V**

Location of Main Parts





JVC

Instructions

MD-CD COMBINATION DECK
PLATINE COMBINÉE MD-CD

XU-301BK

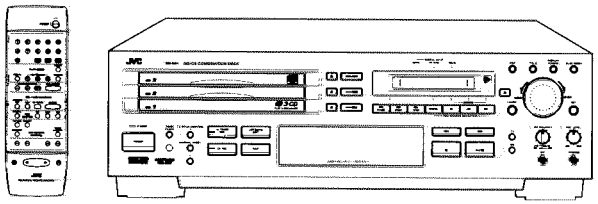
JVC
VICTOR COMPANY OF JAPAN, LIMITED

COMPU LINK Component

TEXT COMPU LINK

Mini Disc

COMPACT disc DIGITAL AUDIO TEXT



INSTRUCTIONS
MANUEL D'INSTRUCTIONS

For Customer Use:
Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

LVT0009-001B
[J]

Warnings, Cautions and Others/Mises en garde, précautions et indications diverses

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION "TO REDUCE THE RISK OF ELECTRIC
SHOCK DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL"

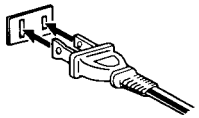
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
To reduce the risk of electrical shocks, fire, etc.:
1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

AC power cord
The AC power cord of this unit has certain one-way direction connections to prevent electric shock. Refer to the illustration for correct connection.



(For CANADA)
CAUTION
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

(Pour le CANADA)
ATTENTION
POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

Thank you for purchasing this JVC product. Please read these instructions through carefully before starting operation to ensure that you will derive the optimum performance and a long service life from your unit.

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English

Precautions

1. Safeguarding against electric shocks, fire hazards and damage

1) A very low current will still flow even when the POWER button is set at STANDBY. To save power and ensure safety when the unit is not going to be used for an extended period of time, disconnect the power cords from the household AC outlet.
2) Do not handle the power cord with wet hands.
3) To unplug the power cord from the wall outlet, always take hold of the molded plug part and pull the plug free rather than pulling the cord.
4) If the power cord is damaged or found to have a disconnected wire or a contact failure, consult your dealer.
5) Do not bend the cord at a sharp angle, and do not pull or twist it.
6) Do not modify the power cord in any way.
7) Do not remove the screws in order to disassemble the unit, and do not touch any of the parts inside the unit.
8) Do not insert metallic objects into the unit.
9) Unplug the power cord if there is a chance that lightning may strike.
10) If water should find its way inside the unit, unplug the power cord from the outlet, and consult your dealer.
11) Do not install the unit in a poorly ventilated location.

2. Installation

1) Avoid placing the unit on or adjacent to an amplifier: this is to prevent the humming caused by the unit's proximity to some types of amplifiers. Move the unit where it will not be affected by the amplifier.
2) Avoid installing the unit where the ambient temperature will exceed 35 °C (95 °F) (namely, in direct sunlight, near a heating appliance, etc.) or drop below 5 °C (41 °F), where it it is very humid or dusty, or where the unit will be subject to vibration.
3) The unit may not function properly if it is moved suddenly from a cold place (0 °C (32 °F)) to a warm place since condensation may form inside the unit. In such a case, leave the unit standing for about 30 minutes, after which time it should function properly.

3. Cleaning the cabinet

Never use benzine or paint thinners to clean the cabinet as they may mar the unit's surface finish.

Features

English

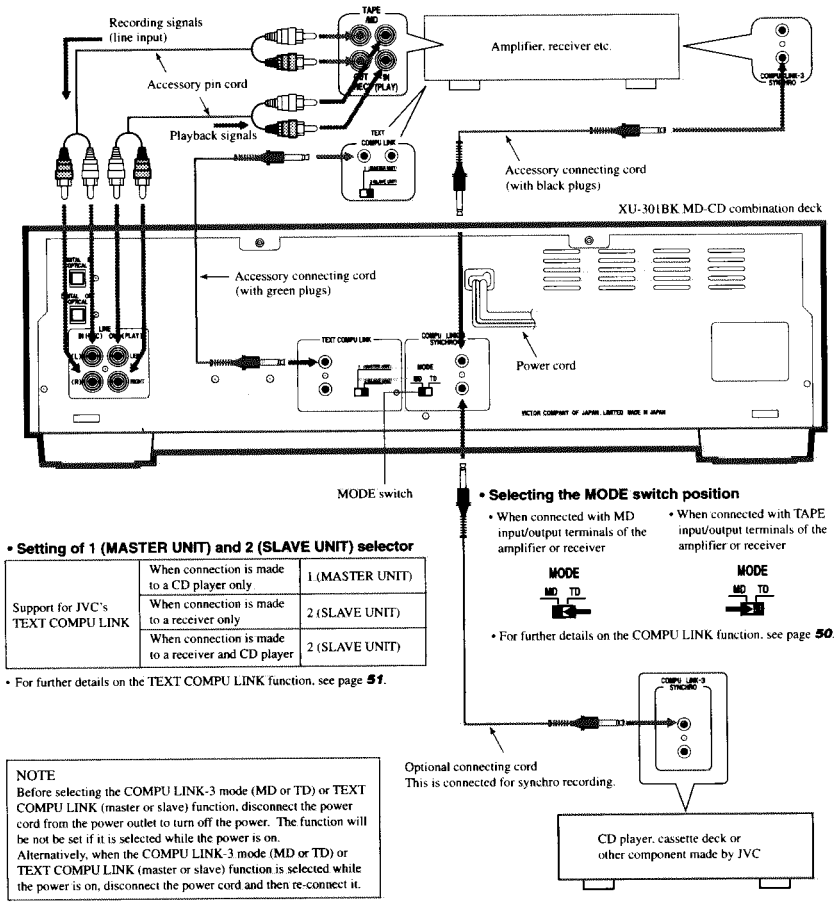
- **3CD + MD combination deck**
  - CD-TEXT facility supported
  - Simultaneous copying of CD-TEXT characters (track titles, etc.) onto MDs
  - Input of CD disc titles and names of artists enabled
- **Full complement of input/output facilities including optical digital, LINE and MIC**
- **Sampling rate converter which supports 3 digital sources incorporated**
  - 32 kHz, 44.1 kHz and 48 kHz
- **Mixing and recording of CD+LINE, CD+MIC or LINE+MIC recording signals possible**
  - Choice of 3 analog recording signal sources (CD, LINE and MIC)
- **3CD + MD mixing programs**
- **CD synchro recording in 3 modes: single action, 1st track and listening edit**
- **CD pitch control**
  - This enables the CD play speed to be adjusted up to 12% faster or slower than the normal play speed.
- **Timer functions**
  - Timer play and timer recording (DAILY or ONCE)
- **Remote control whose buttons can be used to input titles provided with unit**
  - Direct input of letters of alphabet possible

Connections

Do not turn on the power until all the connections have been completed.

Analog Connections

■ Use the accessory pin cords to connect the unit's LINE connectors with the MD connectors on the receiver, etc.



• Setting of 1 (MASTER UNIT) and 2 (SLAVE UNIT) selector

Support for JVC's TEXT COMPU LINK	When connection is made to a CD player only	1 (MASTER UNIT)
	When connection is made to a receiver only	2 (SLAVE UNIT)
	When connection is made to a receiver and CD player	2 (SLAVE UNIT)

• For further details on the TEXT COMPU LINK function, see page ***51***.

• Selecting the MODE switch position

• When connected with MD input/output terminals of the amplifier or receiver

MODE
MD TD

• When connected with TAPE input/output terminals of the amplifier or receiver

MODE
MD TD

• For further details on the COMPU LINK function, see page ***50***.

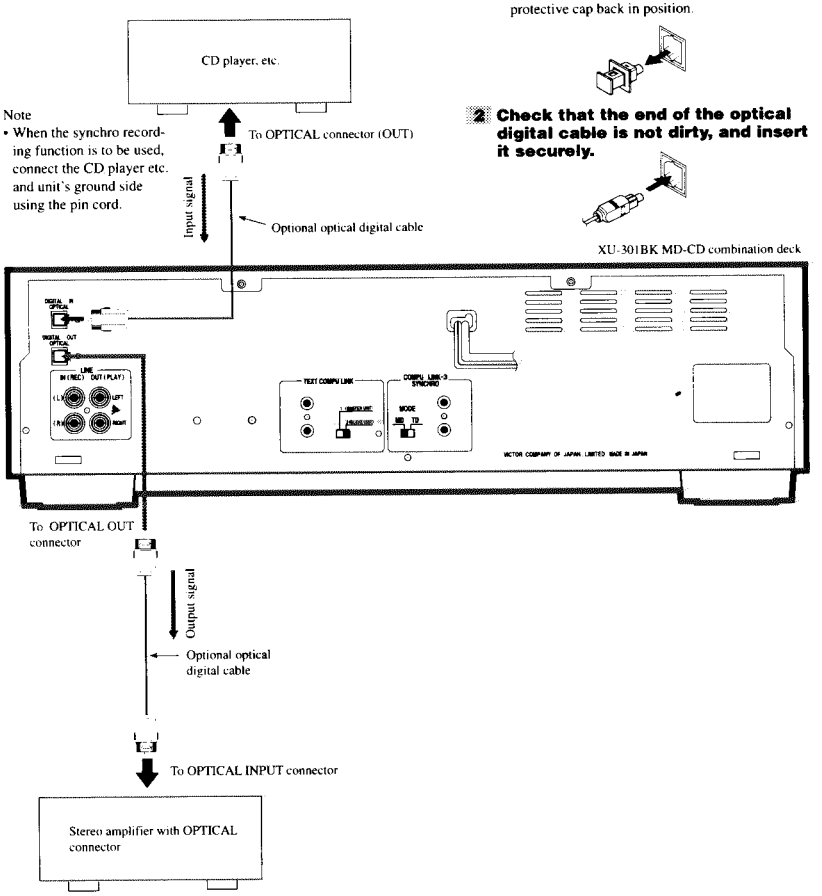
NOTE
Before selecting the COMPU LINK-3 mode (MD or TD) or TEXT COMPU LINK (master or slave) function, disconnect the power cord from the power outlet to turn off the power. The function will be not be set if it is selected while the power is on.
Alternatively, when the COMPU LINK-3 mode (MD or TD) or TEXT COMPU LINK (master or slave) function is selected while the power is on, disconnect the power cord and then re-connect it.

■ Misconnections can be avoided by using the white plugs on the accessory pin cords for the LEFT channel and the red plugs for the RIGHT channel.
■ Insert the plugs all the way in. Incomplete connections cause noise.

Digital Connections

Before proceeding, check whether the optical digital cable can be connected.

■ Connect the stereo amplifier and source component to the DIGITAL (OPTICAL) connectors on the unit using the optical digital cable.
■ One connecting cable is used to transmit the stereo signals (L/R) as the digital signals.



Note
• When the synchro recording function is to be used, connect the CD player etc. and unit's ground side using the pin cord.

• How to use the OPTICAL connectors for the connections

1 Remove the protective cap.
• When the connector is not going to be used, fit this protective cap back in position.

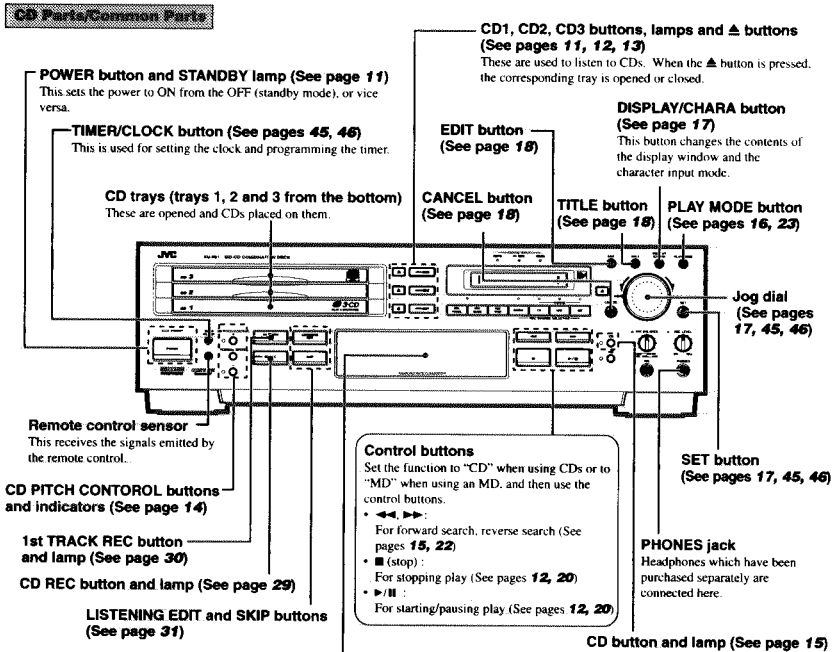
2 Check that the end of the optical digital cable is not dirty, and insert it securely.

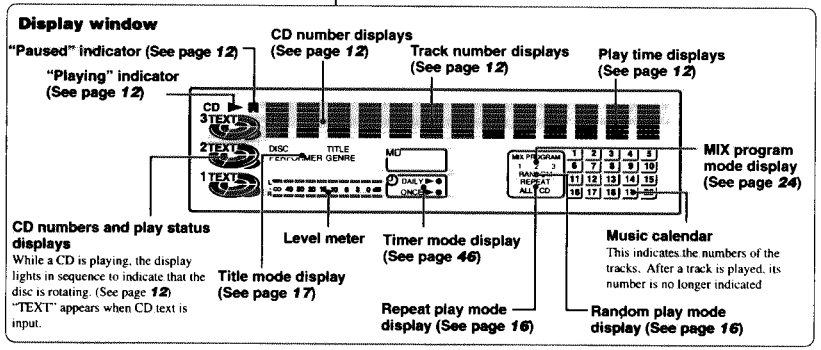
■ Before purchasing an optical digital cable (optional), make sure that the cable in question can be connected to the amplifier, etc.
■ Do not bend the optical digital cable.
■ Red light emitted from the OPTICAL OUT connector
When the power is turned on, the inside of the connector lights up red. This light is for sending the digital signals. Although this light will not harm your eyes, keep the protective cap in place if the connector is not going to be used.

English

Names of the Parts

CD Parts/Common Parts

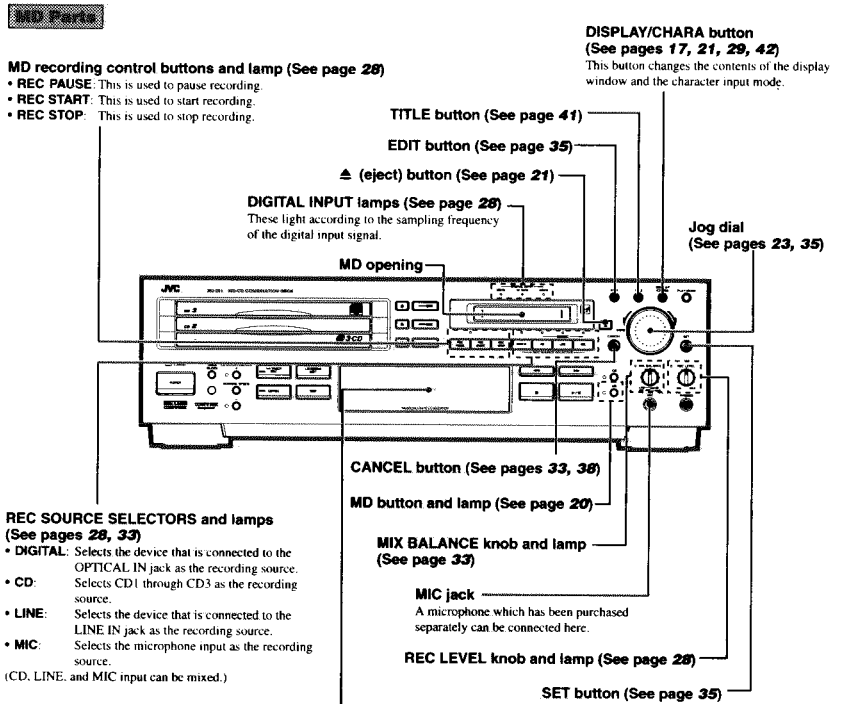

POWER button and STANDBY lamp (See page 11)
This sets the power to ON from the OFF (standby mode), or vice versa.
TIMER/CLOCK button (See pages 45, 46)
This is used for setting the clock and programming the timer.
CD trays (trays 1, 2 and 3 from the bottom)
These are opened and CDs placed on them.
CD1, CD2, CD3 buttons, lamps and ≜ buttons (See pages 11, 12, 13)
These are used to listen to CDs. When the ≜ button is pressed, the corresponding tray is opened or closed.
EDIT button (See page 18)
CANCEL button (See page 18)
DISPLAY/CHARA button (See page 17)
This button changes the contents of the display window and the character input mode.
TITLE button (See page 18)
PLAY MODE button (See pages 16, 23)
Jog dial (See pages 17, 45, 46)
Remote control sensor
This receives the signals emitted by the remote control.
CD PITCH CONTOROL buttons and indicators (See page 14)
1st TRACK REC button and lamp (See page 30)
CD REC button and lamp (See page 29)
LISTENING EDIT and SKIP buttons (See page 31)
Control buttons
Set the function to "CD" when using CDs or to "MD" when using an MD, and then use the control buttons.
• ◄◄, ►►:
For forward search, reverse search (See pages 15, 22)
• ■ (stop):
For stopping play (See pages 12, 20)
• ►/II:
For starting/pausing play (See pages 12, 20)
SET button (See pages 17, 45, 46)
PHONES jack
Headphones which have been purchased separately are connected here.
CD button and lamp (See page 15)

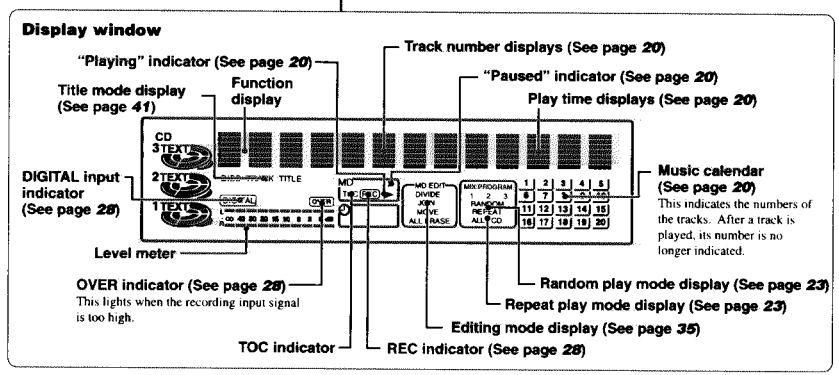

Display window
"Paused" indicator (See page 12)
"Playing" indicator (See page 12)
CD number displays (See page 12)
Track number displays (See page 12)
Play time displays (See page 12)
MIX program mode display (See page 24)
CD numbers and play status displays
While a CD is playing, the display lights in sequence to indicate that the disc is rotating. (See page 12)
"TEXT" appears when CD text is input.
Level meter
Timer mode display (See page 46)
Title mode display (See page 17)
Repeat play mode display (See page 16)
Random play mode display (See page 16)
Music calendar
This indicates the numbers of the tracks. After a track is played, its number is no longer indicated

■ CD play mode display

• This display is cleared when no CD has been detected on the tray and "NO DISC" is displayed.

MD Parts


MD recording control buttons and lamp (See page 28)
• REC PAUSE: This is used to pause recording.
• REC START: This is used to start recording.
• REC STOP: This is used to stop recording.
DISPLAY/CHARA button (See pages 17, 21, 29, 42)
This button changes the contents of the display window and the character input mode.
TITLE button (See page 41)
EDIT button (See page 35)
≜ (eject) button (See page 21)
DIGITAL INPUT lamps (See page 28)
These light according to the sampling frequency of the digital input signal.
Jog dial (See pages 23, 35)
MD opening
CANCEL button (See pages 33, 38)
MD button and lamp (See page 20)
MIX BALANCE knob and lamp (See page 33)
MIC jack
A microphone which has been purchased separately can be connected here.
REC LEVEL knob and lamp (See page 28)
SET button (See page 35)
REC SOURCE SELECTORS and lamps (See pages 28, 33)
• DIGITAL: Selects the device that is connected to the OPTICAL IN jack as the recording source.
• CD: Selects CD1 through CD3 as the recording source.
• LINE: Selects the device that is connected to the LINE IN jack as the recording source.
• MIC: Selects the microphone input as the recording source.
(CD, LINE, and MIC input can be mixed.)

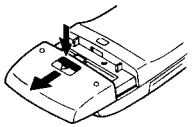

Display window
"Playing" indicator (See page 20)
Track number displays (See page 20)
"Paused" indicator (See page 20)
Title mode display (See page 41)
Function display
Play time displays (See page 20)
DIGITAL input indicator (See page 28)
Music calendar (See page 20)
This indicates the numbers of the tracks. After a track is played, its number is no longer indicated.
Level meter
OVER indicator (See page 28)
This lights when the recording input signal is too high.
Random play mode display (See page 23)
Repeat play mode display (See page 23)
Editing mode display (See page 35)
TOC indicator
REC indicator (See page 28)

* **TOC**: Table of Contents
This corresponds to the table of contents of a book, etc.
The TOC contains the data on the positions where the tracks are recorded, the breaks between the tracks, the track order (track numbers), etc.

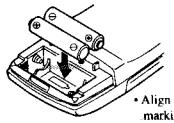
Using the Remote Control

Installing the dry batteries

1 Slide open the cover.

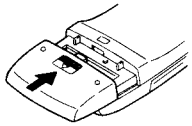


2 Install the dry batteries (Size "AAA", R03 or UM4 x 2).



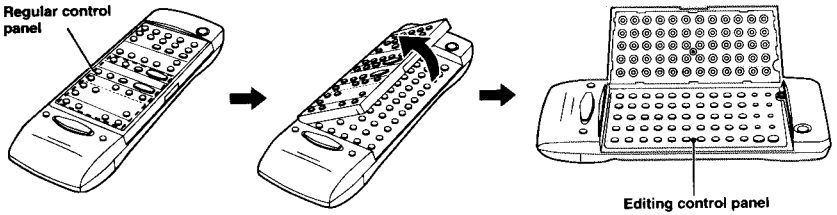
• Align the polarities with the markings inside the battery compartment of the remote control, and install.

3 Slide the cover back into position.

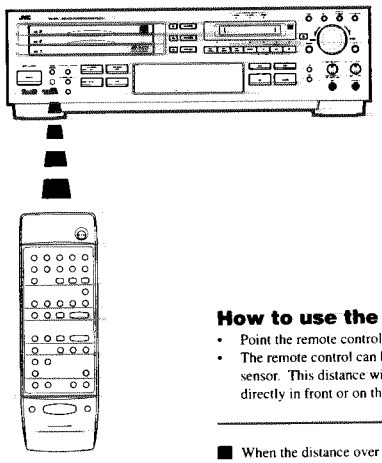


Remote control operations

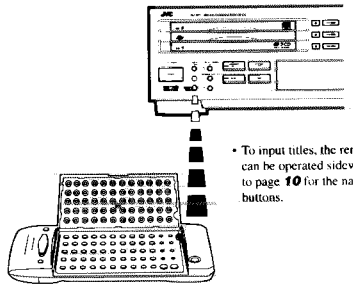
The remote control has two sets of control panels: the regular control panel on the unit's exterior, and the editing control panel which is revealed when the exterior panel is opened out. The regular controls are used mainly for playing CDs and MDs and for recording MDs, and the editing controls are used mainly when editing and inputting titles.



When the regular controls are used



When the editing controls are used



• To input titles, the remote control can be operated sideways. Refer to page ***10*** for the names of the buttons.

How to use the remote control correctly

- Point the remote control correctly at the remote control sensor on the main unit, and press the buttons.
- The remote control can be operated at a distance of up to 7 meters or so from the remote control sensor. This distance will be less if the remote control is operated from a position which is not directly in front or on the same level as the main unit.

■ When the distance over which the remote control can be operated starts to drop, it means that the batteries are nearing the end of their service life.
Replace both batteries (size "AAA", R03 or UM4 alkaline batteries) with fresh units.

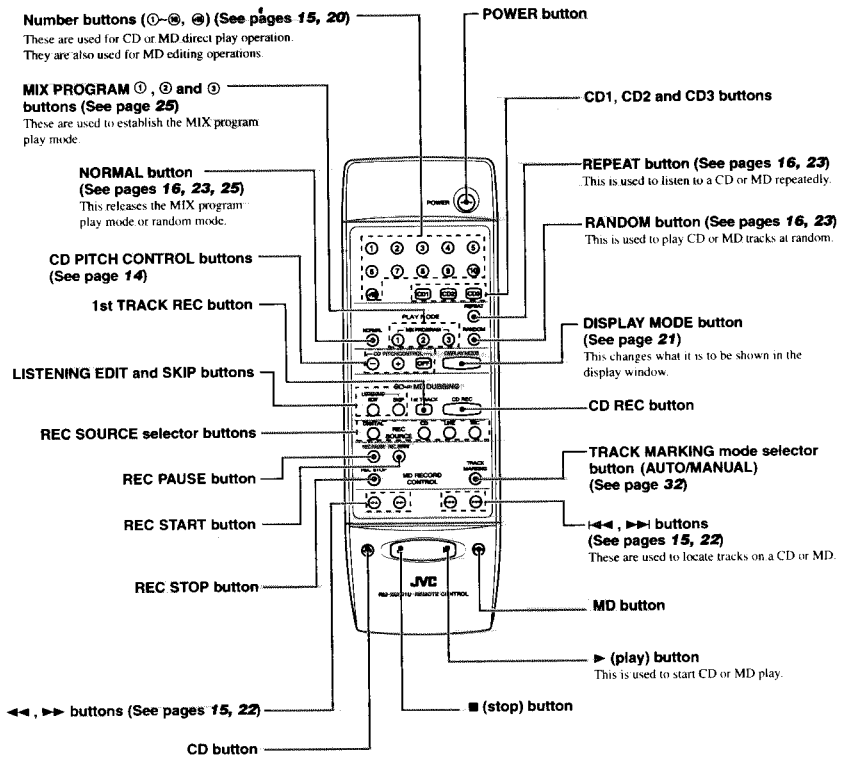
■ The dry batteries provided with the unit are for operational check purposes. Replace them with fresh units at the earliest opportunity.

■ When installing the dry batteries, ensure that the ⊕ and ⊖ polarities are aligned correctly with the markings.

■ Do not drop the remote control or subject it to strong impact.

■ In order to ensure that the remote control does not fail to operate, avoid operation under the following conditions:
- When the remote control sensor is exposed to direct sunlight or other intense sources of light
- When objects in front of the remote control sensor block the transmission of signals from the remote control

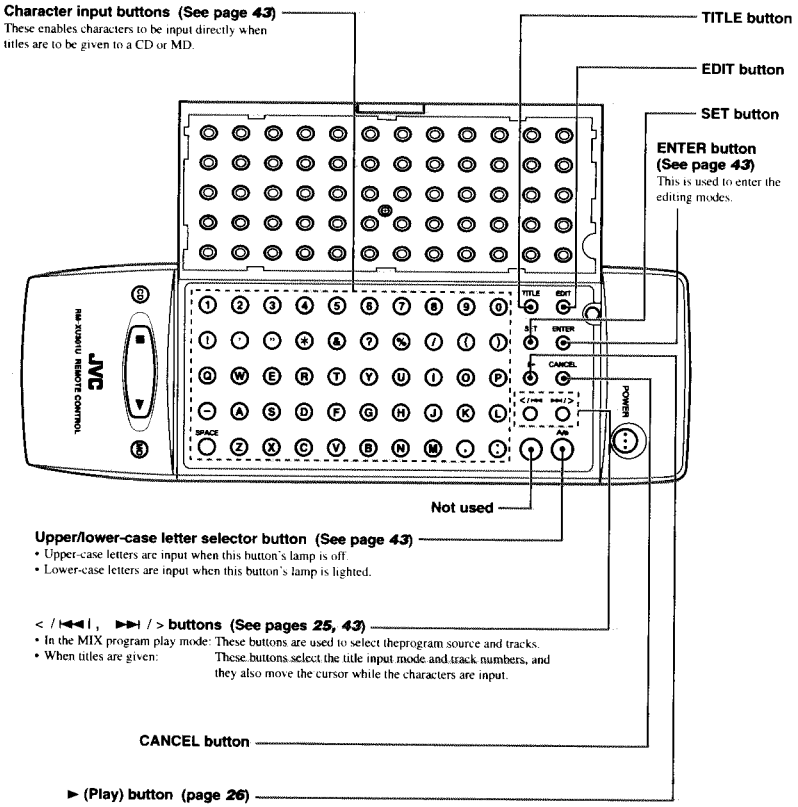
Names of the buttons (regular control panel)


Number buttons (①–⑩, ⑩) (See pages 15, 20)
These are used for CD or MD direct play operation. They are also used for MD editing operations.
MIX PROGRAM ①, ② and ③ buttons (See page 25)
These are used to establish the MIX program play mode.
NORMAL button (See pages 16, 23, 25)
This releases the MIX program play mode or random mode.
CD PITCH CONTROL buttons (See page 14)
1st TRACK REC button
LISTENING EDIT and SKIP buttons
REC SOURCE selector buttons
REC PAUSE button
REC START button
REC STOP button
◄◄, ►► buttons (See pages 15, 22)
CD button
POWER button
CD1, CD2 and CD3 buttons
REPEAT button (See pages 16, 23)
This is used to listen to a CD or MD repeatedly.
RANDOM button (See pages 16, 23)
This is used to play CD or MD tracks at random.
DISPLAY MODE button (See page 21)
This changes what it is to be shown in the display window.
CD REC button
TRACK MARKING mode selector button (AUTO/MANUAL) (See page 32)
|◄◄, ►►| buttons (See pages 15, 22)
These are used to locate tracks on a CD or MD.
MD button
► (play) button
This is used to start CD or MD play.
■ (stop) button

Buttons which are not described here function in the exactly same way as their counterparts on the main unit.

English

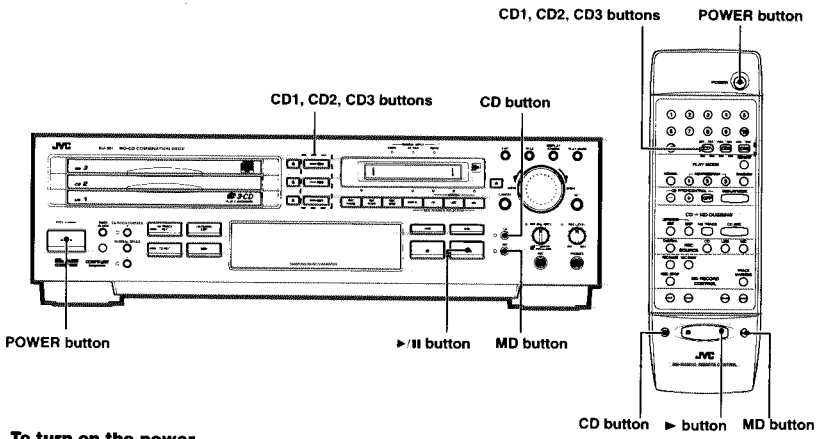
Names of the buttons (editing control panel)


Character input buttons (See page 43)
These enables characters to be input directly when titles are to be given to a CD or MD.
TITLE button
EDIT button
SET button
ENTER button (See page 43)
This is used to enter the editing modes.
Not used
Upper/lower-case letter selector button (See page 43)
• Upper-case letters are input when this button's lamp is off.
• Lower-case letters are input when this button's lamp is lighted.
< / I◄◄ I , ►►I / > buttons (See pages 25, 43)
• In the MIX program play mode: These buttons are used to select theprogram source and tracks.
• When titles are given: These buttons select the title input mode and track numbers, and they also move the cursor while the characters are input.
CANCEL button
► (Play) button (page 26)

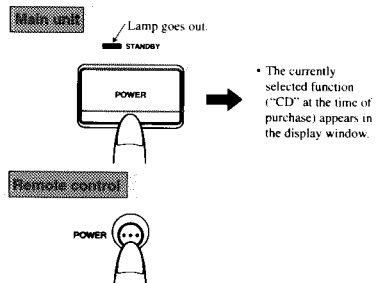
Buttons which are not described here function in the exactly same way as their counterparts on the main unit.

Power ON/OFF Operations

Power ON/OFF operations

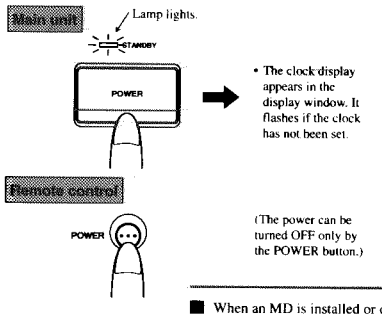


- **To turn on the power**



• The currently selected function ("CD" at the time of purchase) appears in the display window.

- **To turn off the power**



• The clock display appears in the display window. It flashes if the clock has not been set.

(The power can be turned OFF only by the POWER button.)

- **To turn on the power by pressing a function button once**

When the power is off, it can be turned on and a function can be selected simply by pressing one of the buttons shown in the figure below.

	Function	Operation
Main unit CD3 CD2 CD1 Remote control CD1 CD2 CD3	"CD"	If one of these buttons is pressed when a CD is on the corresponding CD tray, continuous play starts from the CD tray which corresponds to the button which was pressed.
Main unit CD Remote control CD	"CD"	The function is set to "CD."
Main unit MD Remote control MD	"MD"	The function is set to "MD."

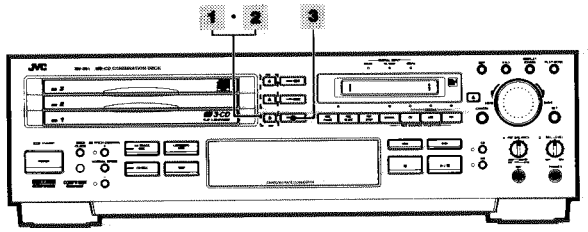
• When the ►/II button (or the ► button on the remote control) is pressed, the power is turned on, and the selected function is established. Play will start when the CD has been placed on the tray or the MD has been inserted in its slot.

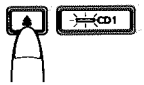
■ When an MD is installed or one of the CD trays is opened, the power will be turned on but the function is not selected. If the ▲ (MD eject) button is pressed when an MD has been inserted in its slot, the power is switched off after the MD has been ejected.

Listening to CDs

Operate by following the steps below in numerical order.

Continuous Play (playing CD1, CD2 and CD3 through once each)



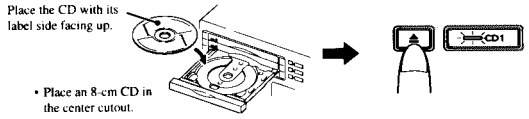


Example: When playing starting with CD1

1 Open the CD tray (by pressing the CD1 ≜ button).

- The power comes on, and the CD1 tray opens.

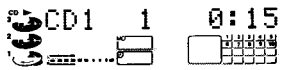
2 Place the CD in position and close the tray.



- While referring to steps 1 and 2, press the CD2 ≜ button and CD3 ≜ button, and place CDs in position on the CD2 and CD3 trays.
- While the tray concerned is being opened or closed or while the CD selection is being changed internally, no operation will result even if the ≜ button is pressed.

3 Press the CD1 button. ➡ Play now starts.

- The function is set to "CD," and CD1 play starts from track No.1.



- The numbers of the tracks which have been played are cleared from the music calendar.

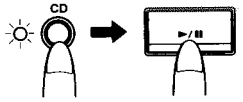
■ When CD3 has been played through, operation stops automatically.

- **When one or more CDs are already on the trays.**

Press the CD1, CD2 or CD3 button corresponding to the CD concerned directly. Continuous play starts with the CD corresponding to the number of the button pressed. If the button is pressed when the power is turned off, continuous play starts when the power is next turned on.

- When play starts from CD2
  The CDs are played in the sequence of CD2 → CD3 → CD1, after which play is automatically stopped.
- When play starts from CD3
  The CDs are played in the sequence of CD3 → CD1 → CD2, after which play is automatically stopped.
  If one of the trays does not contain a CD, play skips to the CD in the next tray in the sequence.

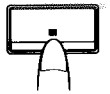
- **Playing CDs using the ►/II button**



• First set the function to "CD."

When the above button is then pressed, play starts from the CD on the tray for which "➘" is displayed.

Stopping CD play

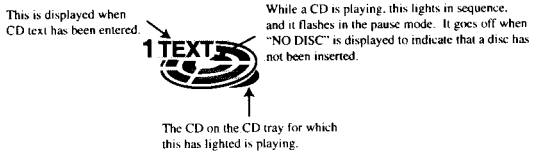


- **Stopping play at any time**
  - When the button on the left is pressed after the function has been set to "CD," the track number and play time appear on the display.
    When all the tracks on a CD have been played through, play will stop automatically.

- **Stopping play temporarily**
  - If the button on the left is pressed when the function has been set to the "CD" mode, the play status display and II indicator flash. When it is pressed again, play is resumed from the place where it was stopped.

- **Concerning the CD numbers and play status display**

The display shows for each CD tray whether or not a CD has been inserted as well as the play status of the CD.


This is displayed when CD text has been entered.
1 TEXT
While a CD is playing, this lights in sequence, and it flashes in the pause mode. It goes off when "NO DISC" is displayed to indicate that a disc has not been inserted.
The CD on the CD tray for which this has lighted is playing.

■ Precaution concerning volume setting
Unlike analog records, CDs have very low levels of noise. If you set the volume on the basis of the level of the noise heard during the intro as you might with an analog record, an unexpectedly loud sound may be delivered as a result. Before turning off the power, turn down the volume to prevent this from happening.

■ If, in step 2, the CD1 button is pressed first while the CD tray is open, the CD tray will close, and play will start from the first track on that CD.

■ Storing CDs
- Always ensure that each CD is stored in its own case.
- Do not place CDs in direct sunlight, near a heating appliance or any other location which is susceptible to high temperatures.

■ If cellophane tape, an adhesive sticker or some other form of glue is present on the label side, clean it off before use.

■ Do not stick adhesive labels or write anything on a CD.

■ Do not bend CDs.

■ Do NOT insert shaped CDs, such as CDs in a heart, flower or other shape, because their shape does not match the shape of the CD tray, and using them will give rise to malfunctioning.

CD PITCH CONTROL

The CD PITCH CONTROL buttons ⊕ and ⊖ can be used to vary the CD playback speed by up to ±12%.
The CD play signals are output to any other device from DIGITAL OUT OPTICAL only when the play speed is set to NORMAL.
Normally, NORMAL SPEED should be set.

CD Text

"CD Text" is a new function featured by music CDs which CDs available to date did not have. it displays the album title, names of the tracks and artists, and other information.
This unit displays the CD Text data using alphanumerics. When material is digitally recorded onto an MD, the CD Text data is recorded together.

CDTEXT

- **To view the CD text information**
  Press the DISPLAY/CHARA button (or the DISPLAY MODE button on the remote control) in the stop or play mode.

Main unit

Remote control

- What is displayed changes each time this button is pressed. Text containing more than 13 characters will be scrolled.

Track number and play time

→ DISC TITLE (or TRACK TITLE)
↓
PERFORMER
↓
GENRE
↓
SONGWRITER
↓
COMPOSER
↓
ARRANGER
↓
MESSAGE

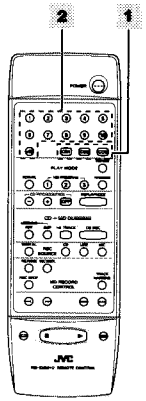
NOTICE

■ "NO DISC" may be displayed as shown if the CD is dusty or scratched or if it has been placed upside down on the tray. In a case like this, check whether the CD is upside down, and turn it over if it is. If it is not, check whether the CD is dusty or scratched and clean or replace it if it is.

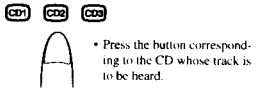
■ If there are no CDs inside the unit and the ▶/II button or CD1, CD2 or CD3 button is pressed, the "NO DISC" message will appear after the corresponding number of the CD.
■ "NO DATA" is displayed for any item in the CD text for which no data has been recorded.
■ When the REPEAT button of the remote control is pressed during continuous play, the continuous play mode is released and the repeat play mode is established instead.

Direct Play (starting play from a specific track)

CD play can be started from a specific track by pressing the corresponding number button(s) on the remote control.

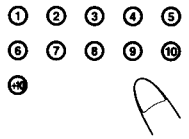


1 Press the CD button.



- Press the button corresponding to the CD whose track is to be heard.

2 Press the number button(s).



- **To play a track from No.1 to No.10**
  Press the number button (①~⑩) corresponding to the track.
- **To play track No.11 or above**
  First press the +10 button, and then press one of the number buttons (①~⑩).
  Example: Track No.15
  Press +10 followed by ⑤.
  Example: Track No.20
  Press +10 followed by ⑩.
  Example: Track No.25
  Press +10 twice followed by ⑤.
  ⋮

The track number corresponding to the buttons pressed appears in the display window, and direct play now starts.

- **Another track can be selected even during play.**
  Press the number button(s) corresponding to the track which is to be heard. The display now changes to indicate the corresponding track No., and play starts from the beginning of the track concerned.
  - To select a track of a CD on another tray, select the CD tray and then perform the same operation.

Reverse Search and Forward Search

After pressing the Ö button.

- Reverse search or forward search is possible by holding down the corresponding button during play. A garbled sound will be heard during reverse search or forward search. Release your finger when the part to be heard is reached.

Main unit

Reverse search Forward search

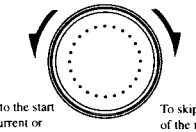
Remote control

Reverse search Forward search

Skipping Tracks

- To skip to the previous or next track with this unit, turn the jog dial. With the remote control, tap the ►►I or I◄◄ button once. When the operation is performed while the last track on the CD is playing, play moves on to the next CD.

Main unit



To skip to the start of the current or previous track

To skip to the start of the next track

Remote control

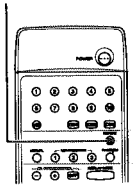
To skip to the start of the current or previous track

To skip to the start of the next track

■ Direct play cannot be initiated by pressing the ⑩ button alone: this button must be used with one of the number buttons (①~⑩). Neither can direct play be initiated when "MIX PROGRAM1–3" or "RANDOM" appears on the display. In this case, clear the display first.

Repeat Play (using the remote control)

REPEAT button



- The repeat play mode can be selected by pressing the REPEAT button on the remote control when the function is set to "CD." Each time, the button is pressed, a different display appears in the display window as shown below.

Displayed.

Repeat play mode is released.

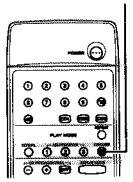
REPEAT ALL : Repeat play of all the tracks on all the CDs.

REPEAT 1 : Repeat play of 1 track

Play is repeated in the selected mode when the CD1, CD2 or CD3 button or ► button (or the ►/II button on the main unit) is pressed.

Random Play

RANDOM button



- The random play mode can be selected by pressing the RANDOM button on the remote control or the PLAY MODE button on the main unit when the function is in the CD stop mode.

Main unit

• Press this button in the stop mode.

Normal display (play mode is released)

P1 NO PROGRAM
P2 NO PROGRAM
P3 NO PROGRAM
: MIX program play mode

CD RANDOM : Random play mode

Remote control

• Press this button in the stop mode.

Normal display (random mode is released) ➡ **CD RANDOM** (Press the NORMAL button to return to the normal mode.)

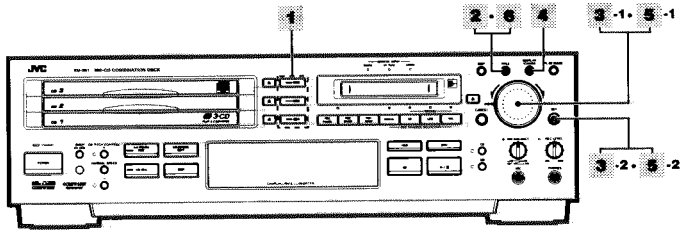
Random play is started by pressing the ►/II button (or the ► button on the remote control).

- **To release the random play mode**

Press the PLAY MODE button in the stop mode.
"RANDOM" is cleared from the display window, and the random play mode is released.
The NORMAL button on the remote control can also be used to release this mode.

Giving a title to a CD

The CD can be given a title as well as the name of the artist and genre of music using up to 32 characters.

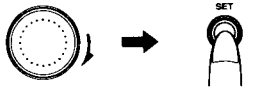


1 Select the CD which is to be given a title.
Example: CD1
- The title can be given while the CD is playing or when it has stopped.

2 Press the TITLE button.

- The disc title input mode is now established.

3 Use the jog dial to select the items and press the SET button.



DISC TITLE : Disc name
PERFORMER : Name of artist
GENRE : Genre of music

• Turn the dial counterclockwise to go in the reverse direction

- If nothing has been entered when PERFORMER or GENRE has been selected, "NO DATA" is displayed.
- When genre has been selected, operation advances to step 5 on page ***18***.

- **To enter the title or name of the artist**

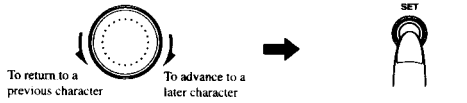
4 Select the type of characters to be used for the title.

Each time this is pressed, the character type changes.

Upper-case letters/symbols
Lower-case letters/symbols
Numbers

For details, refer to the character layout table on page ***44***.

5 Input the title (using up to 32 characters).



Example : Disc title

- If the wrong character has been input, clear it using the CANCEL button.
- The title of your choosing is input by repeating steps 4 and 5.
- To clear a particular character which has been input, use the ◄◄ button to align the cursor with the character, and press the CANCEL button. Then, select the correct character and press the SET button. In this way, any of the characters can be corrected.
- To input a space, press the ►► button during the input procedure. A space can be input either by pressing the SPACE button on the remote control or by entering the space ␣ (positioned between Z and !) among the letters and symbols.

■ Titles for up to 200 CDs can be stored in the unit's memory. When one of these CDs is inserted, its title will be displayed. Track titles and other CD text information is copied together during digital recording.

■ To stop operation at any time
In the play mode, press the ■ (stop) button. In the stop mode, press the ►/II button.

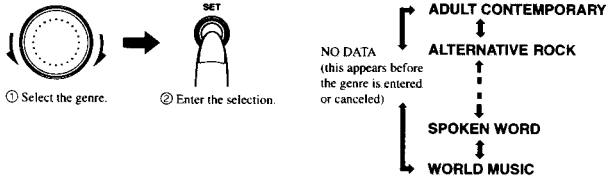
- **When the title or name of the artist has been entered**

6 Press the TITLE button.
- "EDITING" appears, and the data is stored in the memory IC.
- To enter the name of the artist, repeat the procedure starting from step 1.

- **Selecting and entering a genre (genres for up to 200 CDs can be stored)**

Continued from step 1 on page *17*

5 Use the jog dial to select and enter the genre.



- Each time the jog dial is turned, one of the 27 genres can be selected. Genres contained 14 or more letters are scrolled on the display. (➡ See list of genres on the next page)

6 Press the TITLE button.
- "EDITING" appears, and the genre is stored in the memory IC.

■ To cancel a genre which has been stored in the memory IC
Use the jog dial to select "NO DATA," press the SET button and then press the TITLE button.
The genre is now canceled. A different genre can now be selected and stored.

List of Music Genres

Genre
ADULT CONTEMPORARY
ALTERNATIVE ROCK
CHILDRENS MUSIC
CLASSICAL
CONTEMPORARY CHRISTIAN
COUNTRY
DANCE
EASY LISTENING
EROTIC
FOLK
GOSPEL
HIP HOP
JAZZ
LATIN
MUSICAL
NEW AGE
OPERA
OPERETTA
POP MUSIC
RAP
REGGAE
ROCK MUSIC
RHYTHM EFFECTS
SOUND EFFECTS
SOUND TRACK
SPOKEN WORD
WORLD MUSIC

Disc Lock Function

To prevent children from taking out or inserting CDs

A Disc Lock function can be engaged to make it impossible for children to take CDs out or insert others.

■ In the power standby mode, press CD1 ▲ button while holding down ■ button.

⬇

"LOCKED" appears for 3 seconds, and it is no longer possible to take out or insert CDs.

- **To release the Disc Lock function.**
Repeat the same step.

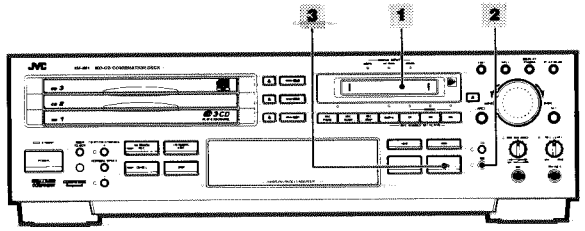
⬇

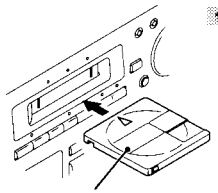
"UNLOCKED" appears for 3 seconds, and the Disc Lock function is released.

Listening to MDs

Operate by following the steps below in numerical order.

Playing all tracks



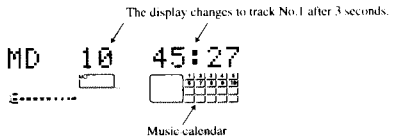


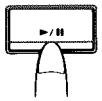
Place the MD with its label side facing up, and insert it in the direction of the ▷or ⇨ mark.

1 Place the MD in position.

- Place the MD with its label side facing up. When it is inserted in the direction shown by the arrow, the power turns on and the MD is automatically drawn inside.
- When "MD" is already set as the function, the track numbers and play time are displayed after the "TOC READING" display.
- The ▭ display appears to indicate that an MD has been inserted.

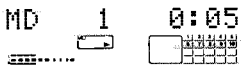
2 Set the function to "MD."





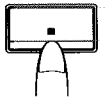
3 Press the ►/II button. ➡ Play now starts.

- MD play starts from track No.1.

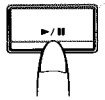


- The numbers of the tracks which have been played are cleared from the music calendar.

Stopping MD play

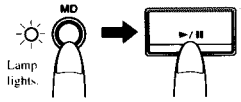


- **Stopping play at any time**
  - When the button on the left is pressed, the track number and play time appear on the display. When all the tracks on an MD have been played through, play will stop automatically.



- **Stopping play temporarily**
  - When the button on the left is pressed, II is displayed. When it is pressed again, play is resumed from the place where it was stopped.

When the MD has been placed inside



- When the button on the left is pressed, the power turns on, and play starts.

- **To eject the MD**

  Press the MD ≜ button. "MD EJECT" appears in the display window, and the MD is ejected. The ▭ display is cleared.
  The MD can be ejected even when the power is off. In this case, as soon as the MD is ejected, the power is automatically turned off.

■ Precaution concerning volume setting

Unlike analog records, MDs have very low levels of noise. If you set the volume on the basis of the level of noise heard during the intro as you might with an analog record, an unexpectedly loud sound may be delivered as a result. Before turning off the power, turn down the volume to prevent this from happening.

■ If there is no MD inside the unit, "MD NO DISC" is displayed when the function is set to "MD" or the ►/II button is pressed.

Changing the display in the display window

- Use the DISPLAY/CHARA button (or the DISPLAY MODE button on the remote control). Each time it is pressed, the display changes as shown below.

- **When it is pressed in the stop mode**

  Play time of track No.1
  ⬇
  Play time of all the tracks
  ⬇
  Remaining time (REMAIN) : "0:00" appears for a play-only MD.
  ⬇
  Disc name : "NO TITLE" appears when the disc name of the MD has not been recorded.

- **When it is pressed during play**

  Elapsed time of track being played
  ⬇
  Track name : "NO TITLE" appears when the track name has not been recorded.

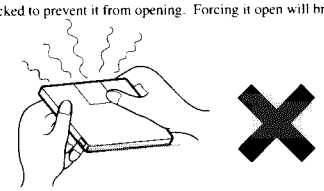
<Tips and Precautions>

- **To ensure that the MD sound remains perfect**

  Each MD disc is housed inside a cartridge which protects it from dust and dirt and which ensures easy handling. However, bear in mind the following precautions to ensure that its sound remains perfect.

Do not open the shutter!

The shutter is locked to prevent it from opening. Forcing it open will break the disc.



Keep MDs away from the following locations!

Do not place or keep MDs in any of the following locations.

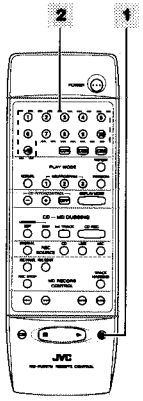
- Any location exposed to direct sunlight, inside a car or wherever the temperature may increase to a very high level
  Such locations will warp the discs and render them unusable.
- A bathroom or other extremely humid location
  The disc may rust.
- A beach, sandbox or other sandy location
  Fine particles will enter through the gaps in the cartridge, dirtying or scratching the disc surface.

Clean at regular intervals!

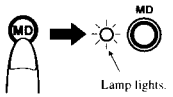
If the cartridge becomes dusty or dirty, wipe away the dust or dirt using a soft, dry cloth.

Direct Play (starting play from a specific track)

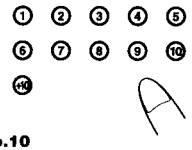
MD play can be started from a specific track by pressing the corresponding number button(s) on the remote control.



1 Set the function to "MD."



2 Press the number button(s).



- **To play a track from No.1 to No.10**
  Press the number button (①~⑩) corresponding to the track.
- **To play track No.11 or above**
  First press the +10 button, and then press one of the number buttons (①~⑩).
  Example: Track No.15
  Press +10 followed by ⑤.
  Example: Track No.20
  Press +10 followed by ⑩.
  Example: Track No.25
  Press +10 twice followed by ⑤.
  ⋮

The track number corresponding to the buttons pressed appears in the display window, and direct play now starts.

- **Another track can be selected even during play.**
  Press the number button(s) corresponding to the track which is to be heard. The display now changes to indicate the corresponding track No., and play starts from the beginning of the track concerned.

Reverse Search and Forward Search

After pressing the Ō button.

- Reverse search or forward search is possible by holding down the corresponding button during play. A garbled sound will be heard during reverse search or forward search. Release your finger when the part to be heard is reached.

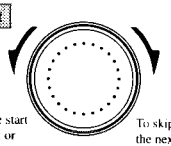
Main unit

Remote control

Skipping Tracks

- To skip to the previous or next track with this unit, turn the jog dial. With the remote control, tap the ►►I or I◄◄ button once.

Main unit

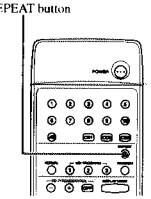


Remote control

■ Direct play cannot be initiated by pressing the (+10) button alone: this button must be used with one of the number buttons (①~⑩). Neither can direct play be initiated when "MIX PROGRAM1–3" or "RANDOM" appears on the display. In this case, clear the display first.

Repeat Play (using the remote control)

REPEAT button



- The repeat play mode can be selected by pressing the REPEAT button on the remote control when the function is set to "MD." Each time, the button is pressed, a different display appears in the display window as shown below.

Repeat play mode is released.

REPEAT ALL : Repeat play of all the tracks on the MD.

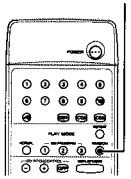
Displayed

REPEAT 1 : Repeat play of 1 track

Play is repeated in the selected mode when the ► button (or the ►/II button on the main unit) is pressed.

Random Play

RANDOM button



- The random play mode can be selected by pressing the RANDOM button on the remote control or the PLAY MODE button on the main unit when the function is set to "MD."

Main unit

• Press this button in the stop mode.

Normal display (play mode is released)

P1 NO PROGRAM
P2 NO PROGRAM
P3 NO PROGRAM
: MIX program play mode

MD RANDOM : Random play mode

Remote control

• Press this button in the stop mode.

Normal display (random mode is released) ➡ **MD RANDOM** (Press the NORMAL button to return to the normal mode.)

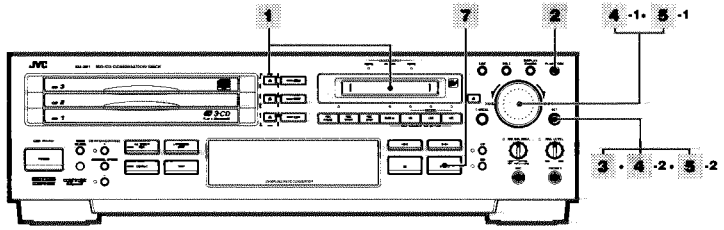
Random play is started by pressing the ►/II button (or the ► button on the remote control).

- **To release the random play mode**
  Press the PLAY MODE button in the stop mode.
  "RANDOM" is cleared from the display window, and the random play mode is released.
  The NORMAL button on the remote control can also be used to release this mode.

MIX PROGRAM Play

Operate by following the steps below in numerical order.

■ Up to 16 tracks can be programmed in programs 1, 2 and 3. Any tracks on the MD, CD1, CD2 and CD3 can be selected.



1 Insert the MD and CDs whose tracks are to be programmed.

- Tracks on an MD or CD which has not been inserted cannot be played even when they have been programmed. Operation will simply move on to the next program.

• Press this if the stop mode has been established.

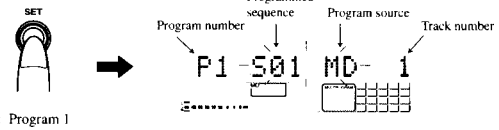
2 Select the program mode. (1 – 3)

Normal display (program mode released) → **MIX PROGRAM 1**: Program 1 → **MIX PROGRAM 2**: Program 2 → **MIX PROGRAM 3**: Program 3 → **RANDOM** → (back to the beginning)

Program mode

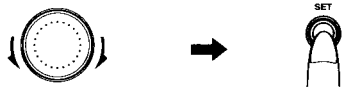
- "NO PROGRAM" appears when no programming has been performed.

3 Press the SET button.



Example: Program 1

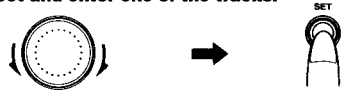
4 Select and enter the program source.



↔ **MD** ↔ **CD1** ↔ **CD2** ↔ **CD3** ↔ (back to the beginning)

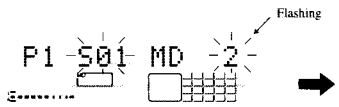
- The source can be selected in the reverse direction by turning the jog dial counterclockwise.
- When the SET button is pressed, the programming sequence and track number flash.

5 Select and enter one of the tracks.

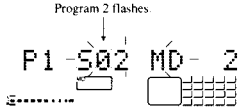


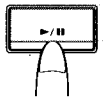
① Select the track. ② Enter the selection.

- When track 2 on the MD is selected for program 1:



- When the selection is entered:





6 Repeat steps 4 and 5 (this procedure can be repeated for up to 16 tracks).

- The tracks on the MD alone or only the tracks on the CDs can be programmed also.

7 Press the ►/II button to start MIX PROGRAM play.

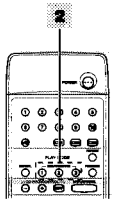
- The numbers of the tracks which have been played are cleared from the music calendar, and they are displayed when play is completed.

■ Operation stops automatically when all the programmed tracks have been played.
The same operating procedure is followed for programs 2 and 3.

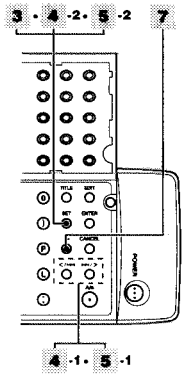
■ To cancel the programming
Press the CANCEL button. The last program setting is canceled. Press the CANCEL button repeatedly to cancel all the program settings.

■ To check the programming
To check what has been programmed while the tracks are being programmed, press the ■ (stop) button, and use the jog dial to check.

Playing MIX PROGRAMs using the remote control



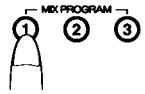
Open the remote control's cover.



1 Insert the MD and CDs whose tracks are to be programmed into the main unit.

2 Select the program mode.

Example: Program 1



- "P1 NO PROGRAM" is displayed.

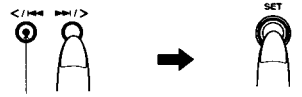
3 Press the SET button.

- "P1 S01 MD 1" is displayed.

4 Select and enter the program source.

- Select one of the sources.

→ **MD** → **CD1** → **CD2** → **CD3** → (back to the beginning)

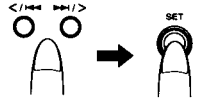


① This can select the source in the reverse direction. ② Then press this button.

- When the SET button is pressed, the programming sequence and track number flash.

English

5 Select and enter the track.



① Select the track. ② Enter the selection.

6 Repeat steps 4 and 5 (this procedure can be repeated for up to 16 tracks).

- The tracks on the MD alone or only the tracks on the CDs can be programmed also.

7 Press the ► button to start MIX PROGRAM play.

■ Operation stops automatically when all the programmed tracks have been played. The same operating procedure is followed for programs 2 and 3.

- **To return the program mode to the normal status in the stop mode**

Main unit

- Repeatedly press this until the play time appears in the display window.

Remote control

- The play time display appears when this button is pressed.

Recording onto MDs

Read through this section before recording.

Types of recording

The following 5 types of recording are possible with this unit.

- **Manual recording (page *28*)**
  One of the recording sources is selected, and its material is recorded.
  - DIGITAL
  - CD (CD1–CD3)
  - LINE
  - MIC
- **CD recording (single-action recording) (page *29*)**
  CD recording is initiated by a single action: just press the CD REC button.
- **CD recording (1st TRACK recording) (page *30*)**
  When the 1st TRACK REC button is pressed, only the first tracks on CD1, CD2 and CD3 are recorded. You can compile your own album of original hit numbers.
- **CD recording (LISTENING EDIT recording) (page *31*)**
  When the LISTENING EDIT button is pressed, only the tracks you want to hear can be programmed and recorded.
- **Mixing recording (page *32*)**
  This enables mixing recording for CD + LINE, CD + MIC or LINE + MIC.

TRACK MARKING

Adding track numbers

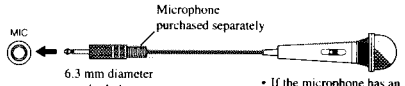
- **Recording the numbers automatically**
  With CD digital recordings, the numbers are added automatically following the numbers in the recording source.
- **Adding your own numbers (at any time except during synchro REC)**
  When MANUAL is set using the TRACK MARKING button and the SET button on the main unit or remote control is pressed during recording, a number can be added exactly where desired.

Sampling rate converter

The unit incorporates a sampling rate converter to ensure that the original digital signals will be recorded regardless of the sampling frequency (32 kHz, 44.1 kHz or 48 kHz) of the recording source.

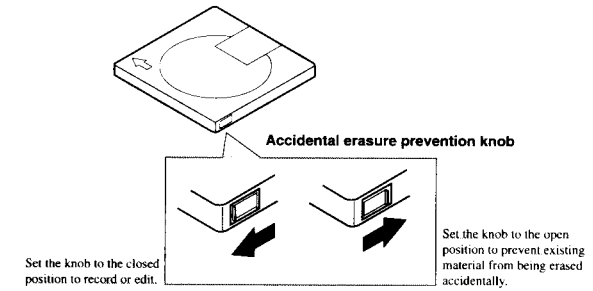
Microphone connections

Use a microphone equipped with a standard plug.



NOTICE

- **To prevent the erasure of important recordings**
  Each recording MD comes with an accidental erasure prevention knob to ensure that important recordings will be not erased by mistake. After recording or editing material, slide the knob on the cartridge side to the open position. This prevents recording over or editing of the existing material. To proceed with recording over or editing, return the knob to the closed position.

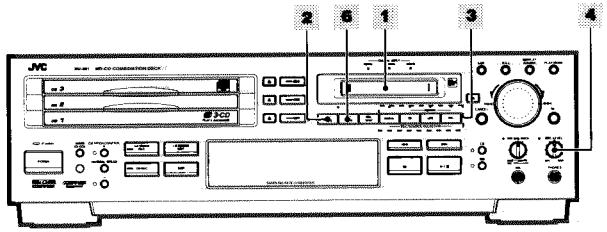

Accidental erasure prevention knob
Set the knob to the closed position to record or edit.
Set the knob to the open position to prevent existing material from being erased accidentally.

- **When sticking adhesive labels onto MD cartridges for use**
  Adhere the label securely all the way to the edge of the cartridge so that it will not peel off. If the label protrudes from its adhesion area or is not adhered properly, it may not be possible to eject the MD or some other trouble may result.

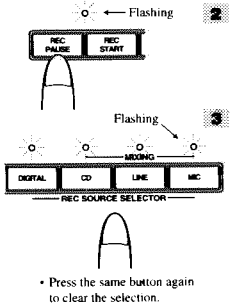
■ Analog signals are recorded when the line input and mic input signals are mixed and recorded. The recording input level must be adjusted.

■ The "DISC PROTECTED" display appears 3 times and then is released when recording operations are performed for a MD whose accidental erasure prevention knob has been set to the open position.

Manual Recording



1 Insert the recording MD.
- Insert the MD with its label side facing up.



2 Establish the rec pause mode.
- The remaining recording time on the MD and [REC] appear in the display window. The record mode indicator lamp flashes.
- All the REC SOURCE SELECTOR lamps flash when none of the REC SOURCE SELECTOR buttons have been selected.

3 Select (one of) the recording sources.
- DIGITAL : For recording the sound of a unit which has been connected to the OPTICAL IN connector (digital input)
- CD : For recording the CDs inserted into CD1, CD2 and/or CD3 (when the CD pitch control is set to OFF for the digital input)
  Note: Analog recording is performed for CD+LINE or CD+MIC mixing even when the CD pitch control has been set to OFF.
- LINE : For recording the sound of a unit which has been connected to the LINE IN connector (analog input)
- MIC : For recording the sound from a microphone which has been connected to the MIC jack (analog input)

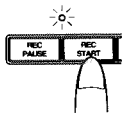
- If a source has already been selected, its corresponding lamp will light. The lamp of the selected source stops flashing and lights. The other lamps go off.

4 When analog signals are supplied, adjust the recording level.

Lamp lights.
REC LEVEL
MIN
MAX
• Adjust the volume in such a way that the 0 dB display is not exceeded when the loudest sound is supplied.
L
R
∞ 40 30 20 15 10 6 3 0 dB

(The sound will be recorded with some distortion if the [OVER] display (red) lights continuously.)

5 Play the sound of the source to be recorded.
- If the CD1 button is pressed when CDs serve as the source, the tracks are recorded in the following sequence: **CD1 → CD2 → CD3**.



6 Press the REC START button to start the recording.
- Press the TRACK MARKING button on the remote control to allocate track numbers during recording.

- **When MD recording is completed**

After "UTOC WRITING" is displayed, operation stops automatically.
Press the REC STOP button to stop the recording at any time.

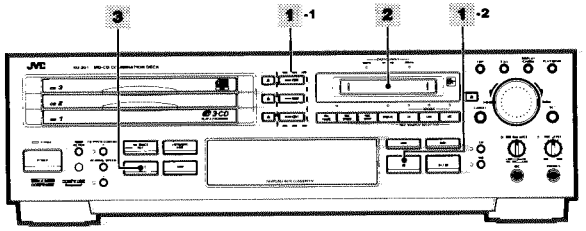
- **DIGITAL INPUT lamps**

These lamps light as follows in the rec pause or recording mode.
- DIGITAL : 32 kHz–48 kHz lights depending on the sampling frequency of the recording source.
- CD : 44.1 kHz lights

- When DIGITAL IN UNLOCK is scrolled and displayed, the OPTICAL IN connector is not connected to the source unit.
- In the case of an MD with some remaining space, the end of the last track recorded is automatically searched, and recording is commenced immediately.
- To record over all the existing tracks, erase all the tracks using the ALL ERASE function (see page ***40***), and then proceed with the new recordings.
- Upon completion of the MD recording, "UTOC WRITING" is displayed. Operating any button while this message is displayed may render the MD unusable.
  Always wait for "UTOC WRITING" to be cleared before proceeding with the next operation.
- When digital input signals are supplied, they will be recorded in their original digital form. There is no need to adjust their recording level.

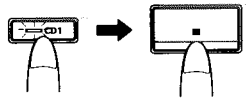
CD Recording (single-action recording)

CD play and MD recording are started simultaneously.

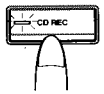


1 Select and stop the CD to be recorded.

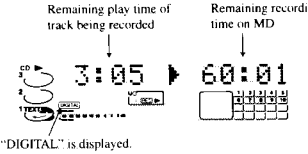
Example: When recording CD1
- Only the selected CD is recorded.



2 Insert the recording MD.
- Insert the MD with its label side facing up.



3 Press the CD REC button to start the recording.
- CD play and MD recording start simultaneously. This is called synchro recording. Recording starts from track 1.



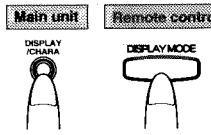
- When a CD is recorded, its digital signals are recorded in their original form. A track mark is automatically placed where one track changes to the next, and the track number also changes.

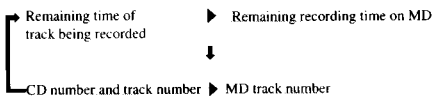
- **When MD recording is completed**

After "UTOC WRITING" is displayed, operation stops automatically. It also stops automatically when CD play finishes. CD play is transferred to the next tray.

- **To check a track number during recording**

Press DISPLAY/CHARA button (or DISPLAY MODE on the remote control).



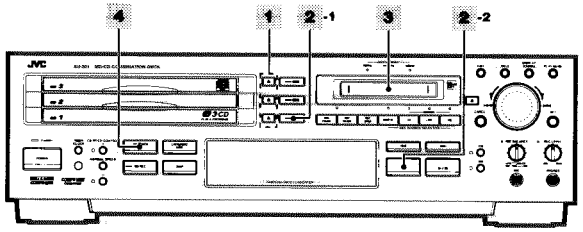


- **To stop the recording at any time**
  Press the ■ (stop) button. The recording mode is released after "UTOC WRITING" is displayed.

- There is no need to adjust the recording level (for a digital recording).
- Recording is not possible while a CD or MD is playing.
- When the CD REC button is pressed, the function is automatically switched to "CD." This means that when the CD to be recorded has been selected, recording can proceed straightaway.
- Upon completion of the MD recording, "UTOC WRITING" is displayed. Operating any button while this message is displayed may render the MD unusable.
  Always wait for "UTOC WRITING" to be cleared before proceeding with the next operation.

CD Recording (1st TRACK recording)

Only the first tracks on the CDs can be recorded on the MD.

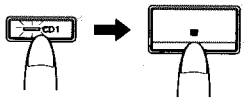


1 Insert CDs into CD1, CD2 and CD3 in the order in which their first tracks are to be recorded.

- Once the first track of a CD has been recorded, another track on that CD can be substituted during recording. The substituted CD track is recorded after the last CD.

2 Select CD1 and establish the stop mode.

Example: When recording from CD1 (CD whose first track is to be recorded first)



3 Insert the recording MD.

- Insert the MD with its label side facing up.

4 Press the 1st TRACK REC button to start recording.

- CD play and MD recording start simultaneously. Only the first track on the CD is recorded.

- When a CD is recorded, its digital signals are recorded in their original form. A track mark is automatically placed where one track changes to the next, and the track number also changes.

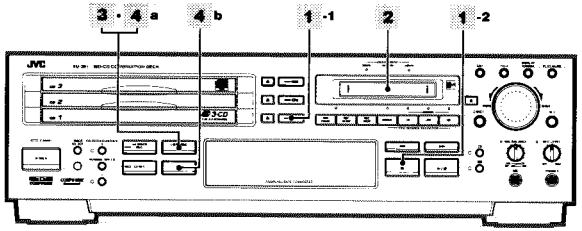
- **When MD recording is completed**
  After "UTOC WRITING" is displayed, operation stops automatically. It also stops automatically when play of the last CD finishes.

- **To stop the recording at any time**
  Press the ■ (stop) button.
  The recording mode is released after "UTOC WRITING" is displayed.

- There is no need to adjust the recording level (for a digital recording).
- Upon completion of the MD recording, "UTOC WRITING" is displayed. Operating any button while this message is displayed may render the MD unusable.
  Always wait for "UTOC WRITING" to be cleared before proceeding with the next operation.
- This unit uses a microcomputer to perform a large number of operations. If the unit fails to operate no matter which button is pressed, disconnect the power cord, and then wait a few moments before re-connecting it.

CD Recording (LISTENING EDIT recording)

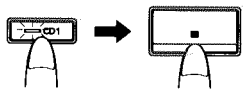
Selected tracks can be programmed and recorded.



1 First, select and stop the CD to be recorded.

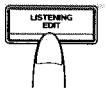
Example: When recording CD1

- Only the selected CD is recorded.



2 Insert the recording MD.

- Insert the MD with its label side facing up.



3 Press the LISTENING EDIT button.

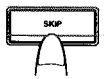
- Start play from the first track, "LISTENING EDIT" is scrolled and displayed, and the play time of the first track and remaining recording time on the MD are displayed. MD is set to the rec pause mode.

4 Program the tracks (while the CD is playing).

a. When the track now playing is to be recorded

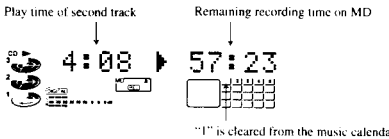
- The track is stored in the memory, and operation moves on to the next track.

b. When the track is not to be recorded



- The track is not stored in the memory, and operation moves on to the next track.

- **When the first track has been stored in the memory**



■ When there is not much recording time left on the MD, the tracks which can be recorded are automatically searched (on all the CDs).

- If a track which can be recorded is found, its play time is displayed. Press the LISTENING EDIT button to program the track.
- If no track which can be recorded is found, recording will start from program 1.

■ When up to 32 tracks are programmed, recording starts from program 1.
The same applies when the programming for all the CDs is completed.

- **When MD recording is completed**
  After "UTOC WRITING" is displayed, operation stops automatically. It also stops automatically when play of the last CD finishes.
- **To stop the recording at any time**
  Press the ■ (stop) button.
  The recording mode is released after "UTOC WRITING" is displayed.

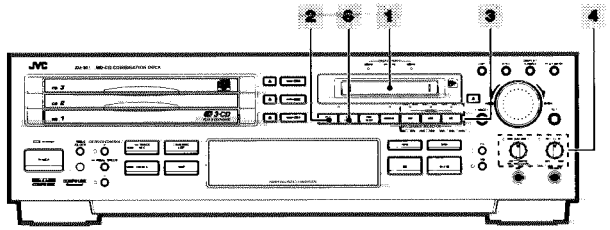
Track marking

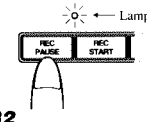
The mode can be switched from AUTO to MANUAL or vice versa by pressing the TRACK MARKING button on the remote control.

- **When AUTO has been set:**
  - Whenever playback advances from one track to another during digital recording, the track number at the MD side is automatically incremented by 1.
  - Whenever no sound at the playback side continues for 3 or more seconds during analog recording, the track number at the MD side is automatically incremented by 1.
- **When MANUAL has been set:**
  - The track number at the MD side remains unchanged whether digital recording or analog recording is performed.
  - The track number at the MD side is automatically incremented by 1 by pressing the SET button on the remote control or unit at the desirable location.

■ There is no need to adjust the recording level (for a digital recording).
■ Up to 32 tracks can be included in the programming. The same track cannot be programmed twice.
■ If a CD has no tracks which are to be recorded, remove it from the CD tray.
■ Upon completion of the MD recording, "UTOC WRITING" is displayed. Operating any button while this message is displayed may render the MD unusable.
Always wait for "UTOC WRITING" to be cleared before proceeding with the next operation.

Mixing Recording



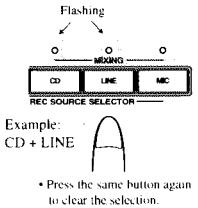


1 Insert the recording MD.

- Insert the MD with its label side facing up.

2 Establish the rec pause mode.

- The remaining recording time on the MD and [REC] appear in the display window.
  All the REC SOURCE SELECTOR lamps flash.



3 Select two recording sources.

- CD + LINE : To mix and record CD and line input signals
- CD + MIC : To mix and record CD and mic input signals
- LINE + MIC : To mix and record line input and mic input signals

- The lamps of the selected sources stop flashing and light. The other lamp goes off.
- Since analog signals are recorded, the REC LEVEL and MIX BALANCE lamps light.

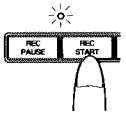
4 Adjust the recording level and mixing balance.

	MIX BALANCE (LINE / CD / MIC / LINE)	MIX BALANCE (LINE / CD / MIC / LINE)
CD + LINE	CD volume is reduced.	Line input volume is reduced.
CD + MIC	CD volume is reduced.	Mic input volume is reduced.
LINE + MIC	Line input volume is reduced.	Mic input volume is reduced.

- Adjust the volume in such a way that the 0 dB display of the level meter is not exceeded when the loudest sound is supplied.

5 Play the sound of the source to be recorded.

- If the CD1 button is pressed when mixing with a CD and recording the result, the tracks are recorded in the following sequence: **CD1 → CD2 → CD3**.



6 Press the REC START button to start the recording.

- **When MD recording is completed**
  After "UTOC WRITING" is displayed, operation stops automatically. Press the REC STOP button to stop the recording at any time.

■ Upon completion of the MD recording, "UTOC WRITING" is displayed. Operating any button while this message is displayed may render the MD unusable.
Always wait for "UTOC WRITING" to be cleared before proceeding with the next operation.

English

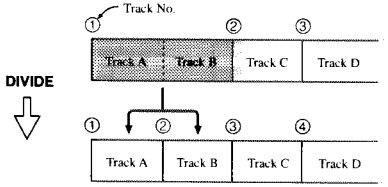
MD Editing Functions

Operate by following the steps below in numeical order.

In addition to its recording and play functions, the MD part of this combination unit comes with editing functions. Recorded tracks can be joined, divided or erased exactly where required.

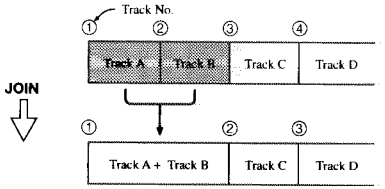
Dividing tracks (DIVIDE function)

This involves adding a track mark (see Note) at some point during the track which is to be made into the start of an additional track so that the original track is divided into two tracks.



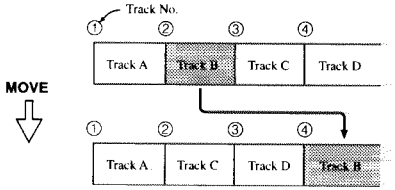
Joining tracks (JOIN function)

This involves erasing a track mark and turning two adjoining tracks into one track.



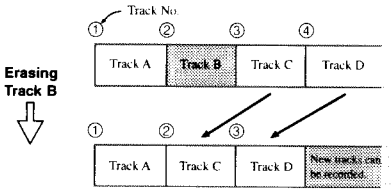
Moving tracks (MOVE function)

Tracks can be moved around so that they are in the desired sequence.



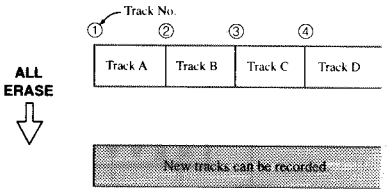
Erasing tracks (ERASE function)

This enables unnecessary tracks, narration, etc. to be erased speedily. The erased parts do not remain as silences but are closed up by the subsequent tracks.



Erasing all the tracks (ALL ERASE function)

All the tracks can be erased at once without recording fresh material over them.



Giving titles to discs and tracks (TITLE function)

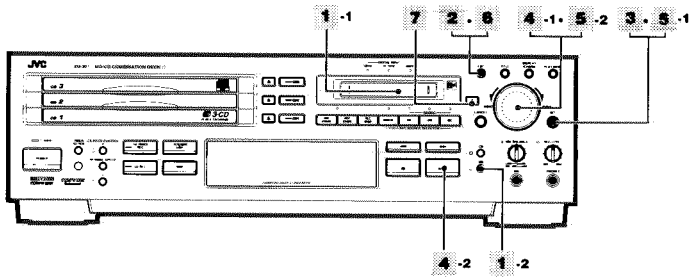
A title consisting of up to 32 characters can be given to a disc and a track. The title given appears in the display window.

■ Note: Track marks

These marks are provided to locate the start of each track. Whatever lies between one track mark and the next is considered to a track, and the numbers of the tracks (called "track numbers") are displayed in the sequence in which they are to be played.

Dividing tracks (DIVIDE function)

English

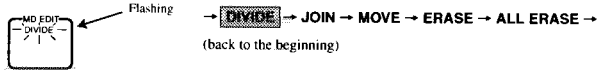


1 Insert the MD to be edited, and set the function to "MD."

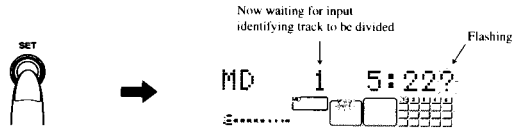
- The number of tracks and play time are displayed.

- The function changes each time this button is pressed.

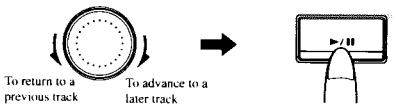
2 Select "DIVIDE."



3 Press the SET button.



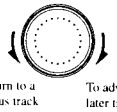
4 Select the track to be divided and play it.



- When the track to be divided is selected using the number button on the remote control corresponding to the track number, the track is played directly.

5 Press the SET button at the point where the track is to be divided.

Example: When dividing the second track



- The numbers of the divided track and subsequent track flash on the music calendar, and the recording lasting for 4 seconds starting where the track was divided is repeatedly played.
- The jog dial can be used to finely adjust the position where the track is to be divided. Movement is possible within the POSITION −128 to 128 range (about 8 seconds before or after the position). The recording lasting for 4 seconds starting from the position to which the dividing point has been moved is repeatedly played.

6 Press the EDIT button.
- "EDITING" appears, and the track number is incremented by 1. The change is stored in the memory IC.
- Play stops automatically.

7 Eject the MD. ➡ The editing mode is now exited.
- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

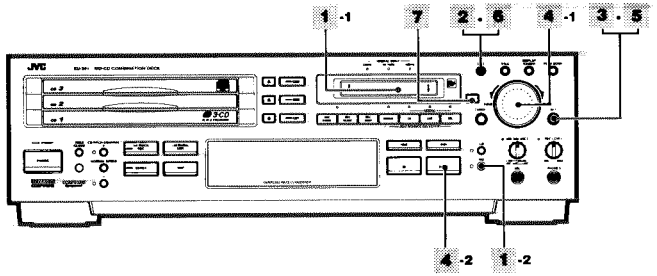
■ The editing mode can also be exited by pressing the POWER button in step 7 to turn off the power.

■ When the wrong track is selected in step 4
Before pressing the SET button, turn the jog dial or use the number buttons on the remote control to select the track again.

■ To stop DIVIDE at any time
Press the EDIT button. If the SET button has already been pressed as in step 5, first press the CANCEL button, and then press the EDIT button.

■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

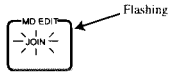
Joining tracks (JOIN function)



1 Insert the MD to be edited, and set the function to "MD."
- The number of tracks and play time are displayed.

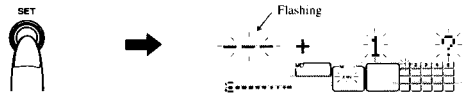
• The function changes each time this button is pressed.

2 Select "JOIN."

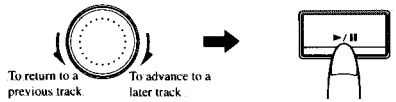


→ DIVIDE → **JOIN** → MOVE → ERASE → ALL ERASE →
(back to the beginning)

3 Press the SET button.

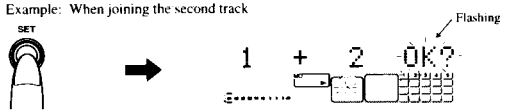


4 Select the track to be joined and play it.



- When the track to be joined is selected using the number button on the remote control corresponding to the track number, the track is played directly.

5 Press the SET button.
Example: When joining the second track



6 Press the EDIT button.
- "EDITING" appears, and the track number is decremented by 1. The change is stored in the memory IC.
- Play stops automatically.

7 Eject the MD. ➡ The editing mode is now exited.
- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

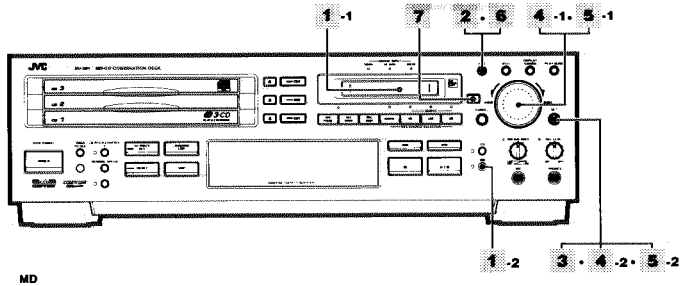
■ The editing mode can also be exited by pressing the POWER button in step 7 to turn off the power.

■ When the wrong track is selected in step 4
Before pressing the SET button, turn the jog dial or use the number buttons on the remote control to select the track again.

■ To stop JOIN at any time
Press the EDIT button. If the SET button has already been pressed as in step 5, first press the CANCEL button, and then press the EDIT button.

■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

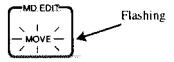
Moving tracks (MOVE function)



1 Insert the MD to be edited, and set the function to "MD."
- The number of tracks and play time are displayed.

• The function changes each time this button is pressed.

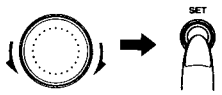
2 Select "MOVE."



→ DIVIDE → JOIN → **MOVE** → ERASE → ALL ERASE →
(back to the beginning)

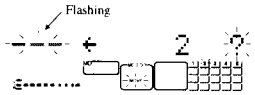
3 Press the SET button.

4 Select the track to be moved.



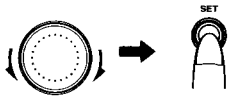
① Select the track. ② Enter the track selection.

Example: When the second track has been selected



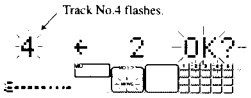
- When the track to be moved is selected using the number button on the remote control corresponding to the track number, the track is played directly.

5 Select the destination to which the track is to be moved.



① Select the track. ② Enter the track selection.

Example: When moving the track to the fourth track



- When the movement destination is selected using the number button on the remote control corresponding to the track number at the destination, the track is played directly.

6 Press the EDIT button.

- "EDITING" appears, and the sequence of tracks is changed. The change is stored in the memory IC.

7 Eject the MD. ➡ The editing mode is now exited.

- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

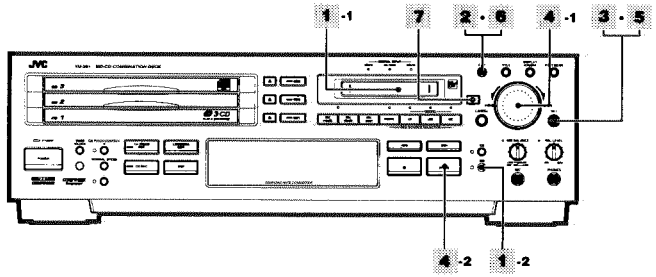
■ The editing mode can also be exited by pressing the POWER button in step 7 to turn off the power.

■ When the wrong track is selected in step 4 and/or step 5.
Before pressing the SET button, turn the jog dial or use the number buttons on the remote control to select the track again.

■ To stop MOVE at any time
Press the EDIT button. If the movement destination has already been selected as in step 5, first press the CANCEL button, and then press the EDIT button.

■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

Erasing a track (ERASE function)

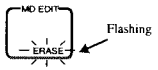


1 Insert the MD to be edited, and set the function to "MD."

- The number of tracks and play time are displayed.

• The function changes each time this button is pressed.

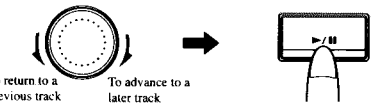
2 Select "ERASE."



→ DIVIDE → JOIN → MOVE → ERASE → ALL ERASE →
(back to the beginning)

3 Press the SET button.

4 Select the track to be erased and play it.



- When the number button on the remote control corresponding to the track number is pressed, the track to be erased is played directly.

5 Press the SET button.

Example: When erasing the second track

6 Press the EDIT button.

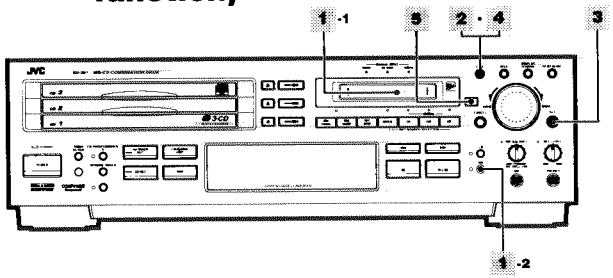
- "EDITING" appears, and the second track is erased. The change is stored in the memory IC.
- Play stops automatically.

7 Eject the MD. ➡ The editing mode is now exited.
- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

■ The editing mode can also be exited by pressing the POWER button in step 7 to turn off the power.

■ Once a track is erased, the recording cannot be restored.
Keep the accidental erasure prevention knob on an MD containing important recordings to the open position. ➡ See page **27**.
■ When the wrong track is selected in step 4
Before pressing the SET button, turn the jog dial or use the number buttons on the remote control to select the track again.
■ To stop ERASE at any time
Press the EDIT button. If the track has already been selected as in step 5, first press the CANCEL button twice, and then press the EDIT button.
■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

Erasing all the tracks (ALL ERASE function)



MD

1 Insert the MD to be edited, and set the function to "MD."
- The number of tracks and play time are displayed.

EDIT

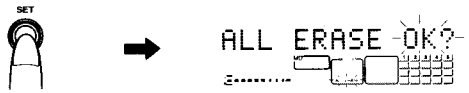
• The function changes each time this button is pressed.

2 Select "ALL ERASE."

MD EDIT / ALL ERASE (Flashing) → DIVIDE → JOIN → MOVE → ERASE → ALL ERASE → (back to the beginning)

3 Press the SET button.

SET



EDIT

4 Press the EDIT button.

EDITING ➡ MD BLANK DISC

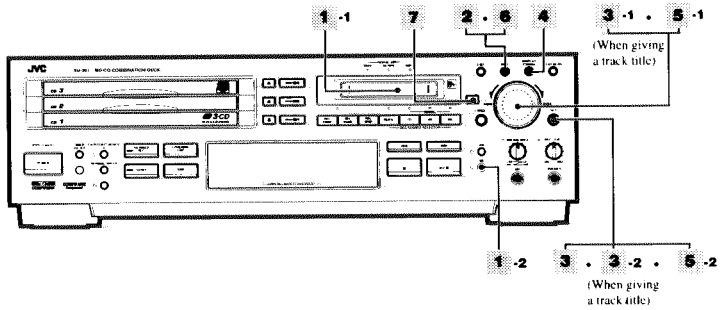
- "MD BLANK DISC" appears, and all the tracks are erased. The change is stored in the memory IC.

5 Eject the MD. ➡ The editing mode is now exited.
- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

■ The editing mode can also be exited by pressing the POWER button in step 5 to turn off the power.

■ To stop the ALL ERASE operation at any time
Press the EDIT button.
■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

Giving titles to discs and tracks (TITLE function)



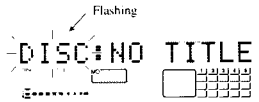
MD

1 Insert the MD to be edited, and set the function to "MD."
- The number of tracks and play time are displayed.

2 Press the "TITLE" button.

TITLE

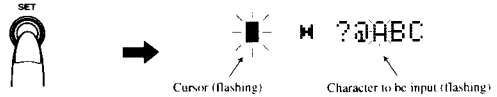
• Press this when the unit is in the stop mode.



3

- **To give a title to a disc (DISC TITLE). Press the SET button.**

SET

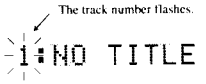


- **To give a title to a track (TRACK TITLE) Select the track which is to be given a title, and press the SET button.**

SET

• The cursor flashes.

Example: Giving a title to track No.1



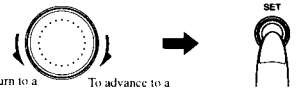
4 Select the type of characters to be used for the title.

Each time this is pressed, the character type changes. (The input characters appear in the display window.)

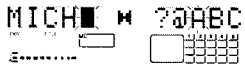
Upper-case letters/symbols
↓
Lower-case letters/symbols
↓
Numbers

For details, refer to the character layout table on page **44**.

5 Input the title (using up to 32 characters).



① Select the characters. ② Enter the selection.



- If the wrong character has been input, clear it using the CANCEL button.
- The preferred title is input by repeating steps 4 and 5.
- To clear a particular character which has been input, use the ◄◄ button to align the cursor with the character, and press the CANCEL button. Then, select the correct character and press the SET button. In this way, the character can be corrected.
- If the ►► button is pressed when the cursor is positioned as shown in the figure above, a space will be input.

6 Press the TITLE button.

- The title now appears after "EDITING." It is stored in the memory IC.
- To give other tracks titles, repeat the procedure starting with step 2.

7 Eject the MD. ➡ The editing mode is now exited.

- After "UTOC WRITING" is displayed, the MD is ejected.
- The data in the memory IC has been recorded on the MD.

■ The editing mode can also be exited by pressing the POWER button in step 7 to turn off the power.

■ In step 3, only those numbers of the tracks which are recorded on the MD can be selected by the jog dial as track numbers.

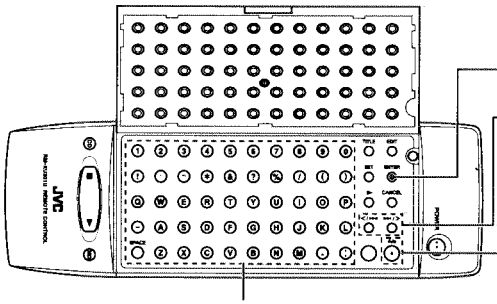
■ To stop operation at any time
Press the TITLE button in step 2, 3, 4 or 5.

■ Up to 5 characters which are being input can be displayed. When the sixth character is input, the characters are scrolled forward so that the first character is cleared from the display.

■ Do not disconnect the power cord or subject the unit to the vibration while "UTOC WRITING" appears. Doing so may make it impossible to play the MD.

Editing operations using the remote control

Buttons bearing the same markings as those on the main unit function in exactly the same way as their main unit counterparts. This section describes how to use the buttons on the remote control which are not provided on the main unit.



	Lamp off	Lamp on*
A/a	Characters can be input as upper-case letters.	Characters can be input as lower-case letters.

Character input buttons:
These are used to input alphanumerics directly as per the character input mode.
Spaces and "–" can be input regardless of the input mode which has been selected.

* The lamp automatically goes off if none of the button is pressed for two or more minutes.
The lamp can be turned on or off by pressing the ⊙ button.

Giving titles to discs and tracks using the remote control

1 Insert the MD to be edited, and press the MD button.
Open the remote control's cover.

2 Press the TITLE button.

3 -1 (MD stop mode)
- **To give a title to a disc:**
  Press the SET button.
- **To give a title to a track:**
  Select the track using ⊙ ⊙, and press the SET button.

3 -2 (During MD play)

Proceed to skipping step 4.

4 Select upper-case or lower-case letters using the ⊙ button.

⊙ (Lamp off) : Upper-case letters can be input.

⊙ (Lamp on) : Lower-case letters can be input.

5 Input the title (containing up to 32 characters) using the character input buttons.
- The characters can be input directly.

6 Press the ENTER button.
- The procedure can also be completed by pressing the TITLE button again.

7 Eject the MD. ➡ This completes the editing.
- UTOC WRITING flashes, and the MD is ejected.

■ When selecting a track using the number buttons on the remote control, keep the remote control's cover closed while using the buttons.

Character Layout Table

This unit enables the titles of the album and tracks to be written for the disc and tracks which have been recorded.
The characters which can be used for this purpose are shown below.

Upper-case letters

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
Z				
(space)	!	”	#	$
%	&	’	(	)
*	+	,	−	.
/	:	;	<	=
>	?	@		

Lower-case letters

a	b	c	d	e
f	g	h	i	j
k	l	m	n	o
p	q	r	s	t
u	v	w	x	y
z				
(space)	!	”	#	$
%	&	’	(	)
*	+	,	−	.
/	:	;	<	=
>	?	@		

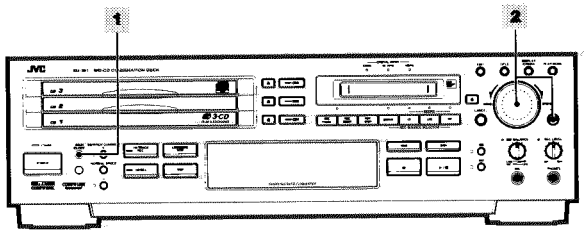
Numbers

0	1	2	3	4
5	6	7	8	9

Setting the Clock

Setting the Present Time

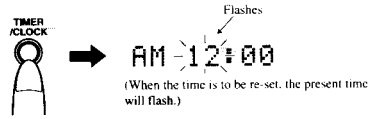
(to be performed when the unit is to be used for the first time)



- **Example: Setting the time to 1:15 PM (while the power is OFF)**
  This unit uses a 12-hour clock to indicate the time.

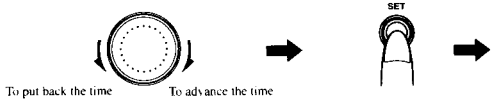
1 Press the TIMER/CLOCK button.

- The time display is illuminated, and the "hour" display starts flashing.



(When the time is to be re-set, the present time will flash.)

2 Set the clock. (The time changes continuously when the jog dial is turned.)



① Use the dial to align the "hour" display with "PM 1:00".

PM 1:00

② Press the SET button. "PM 1:00" is displayed.

PM 1:00

③ Use the dial to align the "minute" display with "PM 1:15".

PM 1:15

④ Press the SET button. "PM 1:15" is displayed. Two seconds later, the display darkens.

PM 1:15

English

AM 12:00

- **To ascertain the correct time**
  Use the time display on your TV screen or call the speaking clock.
- **When a power failure has occurred or the power cord has been disconnected**
  The time display is cleared, and the "AM 12:00" flashing display is returned. In a case like this, re-set the time by previous steps 1 and 2. When the power cord is left disconnected for an extended period of time, the time display returns to "0:00."
- **Setting the time while the power is ON**
  After the power has been turned on, press the TIMER/CLOCK button, select the present time display, and set the time.

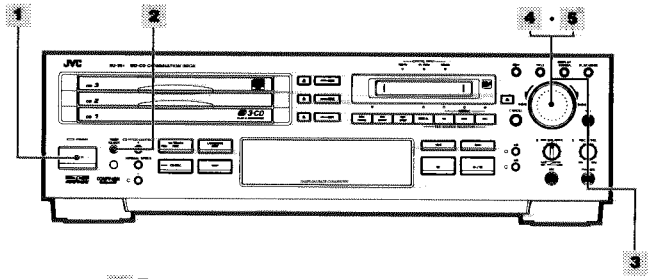
Function display: DAILY TIMER → ONCE TIMER → Present Time: Select this display and set the time.

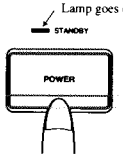
■ If the CANCEL button is pressed while setting the "minute" display, the flashing "hour" display is restored. This function comes in handy for correcting the "hour" display.

Timer Operations

Operate by following the steps below in numerical order.

Timer Play (wake-up play)





1 Turn on the power.
- The selected function ("CD" at the time of purchase) is displayed.

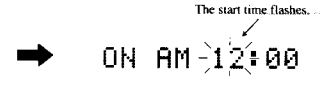
2 Select the timer mode (DAILY TIMER or ONCE TIMER).

Function display:
- **DAILY TIMER** : The timer is activated every day.
- **ONCE TIMER** : The timer is activated only once.
- **Present Time** ("hour" display flashes.)

• The mode changes each time this button is pressed.

Operating examples
- Set DAILY TIMER for timer playback.
- Set ONCE TIMER for timer recording.

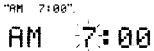
3 Press the SET button.



4 Set the timer start time (this unit uses a 12-hour clock).

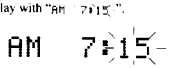
Example: When timer play is to start at 7:15AM

① Use the dial to align the "hour" display with "AM 7:00".

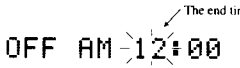


② Press the SET button. "AM 7:00" is displayed.

③ Use the dial to align the "minute" display with "AM 7:15".



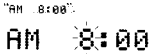
④ Press the SET button. "OFF AM 12:00" is displayed.



5 Set the timer end time.

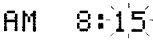
Example: When timer play is to end at 8:15AM

① Use the dial to align the "hour" display with "AM 8:00".

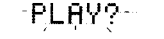


② Press the SET button. "AM 8:00" is displayed.

③ Use the dial to align the "minute" display with "AM 8:15".



④ Press the SET button. "PLAY? " is displayed.

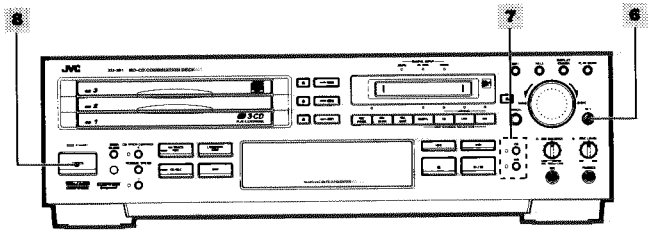


Continues to page **48** or **49**.

■ Before proceeding with timer programming, make sure that the present time has been set correctly.
➡ See page **45**.

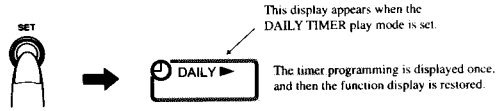
■ If the CANCEL button is pressed while setting the "minute" display, the flashing "hour" display is restored. This function comes in handy for correcting the "hour" display.

Timer Play (wake-up play) (continued)



Continued from page 47 (while "PLAY?" is flashing)

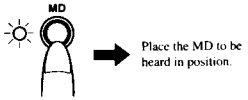
6 Press the SET button.


SET
This display appears when the DAILY TIMER play mode is set.
DAILY ►
The timer programming is displayed once, and then the function display is restored.

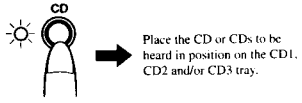
- When "REC?" flashes, turn the jog dial to select "PLAY?" flashing.
- The timer programming is displayed once, and then the function display is restored.

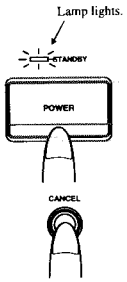
7 Set the function to "CD" or "MD"—whichever disc is to be heard—and place the MD or CD in position.

- When MD play is set.



- When CD play is set.





8 Turn off the power.
The present time now appears in the display window.

■ Match the connected receiver or other source with the unit's setting, and adjust the volume to the appropriate level. Match the timer with the unit's timer setting.

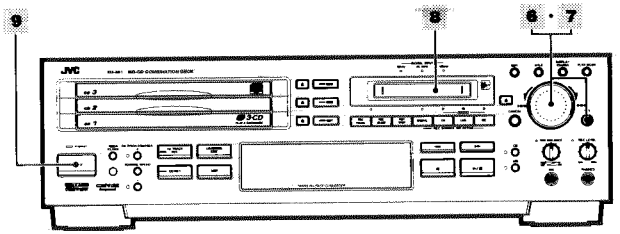
⋮

■ Timer play now starts at the programmed start time, and the power is turned off at the programmed end time.

- **Clearing a timer operation**

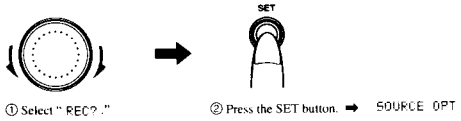
Turn on the power, press the TIMER/CLOCK button, select the timer mode, and press the CANCEL button.
The DAILY ► (or ONCE ►) display is cleared, and the timer operation is also cleared.

Timer Recording (unattended recording of the sound from a broadcast receiver or other component)

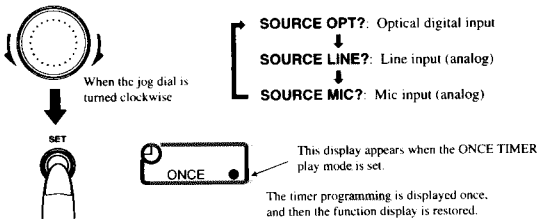


Continued from page 47 (while "PLAY?" is flashing)

6 Select "REC?" and press the SET button.

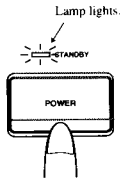


7 Select the sound source to be recorded, and press the SET button.


When the jog dial is turned clockwise
SOURCE OPT?: Optical digital input
SOURCE LINE?: Line input (analog)
SOURCE MIC?: Mic input (analog)
SET
ONCE
This display appears when the ONCE TIMER play mode is set.
The timer programming is displayed once, and then the function display is restored.

8 Place the recording MD in position.

- Place the MD with its label side facing up, and insert it in the direction of the ▷ or ⇨ mark.



9 Turn off the power.
The present time now appears in the display window.

■ Match the timer of the connected source with the unit's setting. (In the case of the mic input, ensure that the microphone has been connected to the unit.)

⋮

■ Recording will now start at the programmed start time, and the power will be turned off at the programmed end time.
When operation is completed once in the ONCE TIMER mode, the timer programming is cleared.

■ If digital signals are not supplied when timer recording has been started with digital input signals, "DIGITAL IN UNLOCK" is scrolled on the display, and no signals will be recorded.
■ When using the timer to record a BS program, for instance, check that the broadcast station with the desired program can be tuned in correctly before programming the timer start and end times.
■ The timer programming is cleared when the power has failed or the power cord has been disconnected. In a case like this, reset the clock and repeat the timer programming.

English

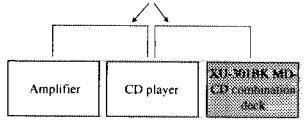
COMPU LINK Function

• What is COMPU LINK?

The COMPU LINK remote control system (or, simply, "COMPU LINK") serves to enable the kind of simple operations provided by an integrated component to be conducted even though this unit is a discrete component.
These simple operations can be performed by connecting the COMPU LINK-3 SYNCHRO or COMPU LINK-1 SYNCHRO connector on each of the components involved.

Connections

Accessory connecting cords

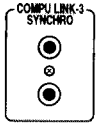


The COMPU LINK functions provided with JVC's products come in the form of COMPU LINK-3 or COMPU LINK-1. They are compatible, and the difference between them is that COMPU LINK-3 has the functions of COMPU LINK-1 and some additional functions as well.

• Synchro recording

With this function, recording starts automatically in synchronization with the start of the source playback.

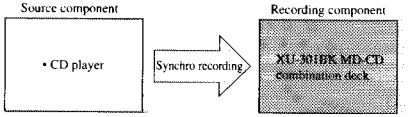
How to identify the type of COMPU LINK function provided



The type of function is marked above the connector on the rear panel of the product. For instance, a product with the COMPU LINK-3 SYNCHRO marking supports the COMPU LINK-3 function.

Operation To perform

• Synchro recording



Example: CD player ➡ MD-CD combination deck

1 Place the CD inside the CD player.
- Program the tracks if they are to be recorded in a programmed sequence.

2 Place the recording MD in the MD-CD combination deck.

3 Press the DIGITAL button (with digital connections).
- Press the LINE button when analog connections have been performed.

4 Press the REC PAUSE button.
- Always proceed to operate from the stop mode.

5 Press the PLAY button on the CD player.
- The CD play and MD-CD combination deck recording now start automatically.

TEXT COMPU LINK Control System

English

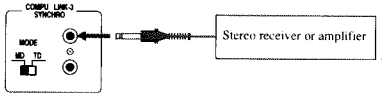
This system transfers text information back and forth between the individual components of an audio system, and it enables CD text and MD text information to be displayed on the receiver (or amplifier) or on the TV screen, in which case it uses the on-screen display function of the receiver (or amplifier). The following operations can be performed by connecting the unit using the TEXT COMPU LINK function.
- Tracks can be selected by checking their disc and track titles displayed on the TV screen.
- Disc or track titles can be input for recording MDs using the TV screen.
- When recording material from a CD which supports the CD TEXT function to an MD, the CD TEXT track title information is recorded in its original form onto the MD.

Connections with amplifier or receiver (refer to page 4)

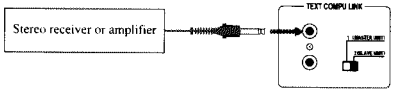
To use this control system, the XU-301BK must be connected with the stereo receiver or stereo amplifier following the steps below.

1. If the stereo receiver or amplifier and this unit have already been plugged into the AC outlets, disconnect their AC power cords.
2. Connect the receiver and unit as described below using the COMPU LINK-3 (SYNCHRO) and TEXT COMPU LINK connectors.

1) COMPU LINK-3 (SYNCHRO) connectors: Use the cable with the monaural mini-plugs (black).



2) TEXT COMPU LINK connectors: Use the cable with the stereo mini-plugs (green).



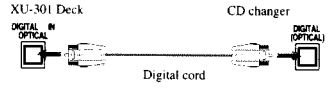
IMPORTANT:
Set the Master/Slave Selector on the rear panel to "2 (SLAVE UNIT)."

3. Connect the stereo receiver and unit using the cables with RCA pin plugs (see page 4) (and a digital cable if desired: see page 5).
4. Connect the AC power cords of these components to the AC outlets.

Notes:
- In order to use the TEXT COMPU LINK function, you must use a JVC receiver (or amplifier) which supports this function and you must connect it correctly using the designated cord.
- For further details on how to use the TEXT COMPU LINK function, refer to the Instruction Manual accompanying the receiver (or amplifier) which supports this function.

Connection to CD player or CD changer (refer to page 4 and 5)

This unit can record CD TEXT information onto an MD when it is directly connected to a CD changer made by JVC which supports the TEXT COMPU LINK function. The optical digital cables are used for this connection.



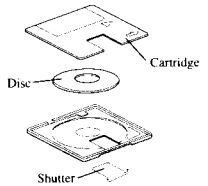
NOTES:
- Connect the COMPU LINK-3 (SYNCHRO) connector on the unit to the COMPU LINK-3 (SYNCHRO) connector on the CD changer.
- Connect the TEXT COMPU LINK connector on the unit to the TEXT COMPU LINK connector on the CD changer.
- Set the master/slave selector on the unit to "1 (MASTER UNIT)."

Information on MDs (Minidiscs)

This is a new digital audio disc format: it has a diameter of 64 mm and enables up to 74 minutes of playback and recording.

Function of the cartridge

The diameter of the actual disc is 64 mm, making it slightly smaller than CD singles. Each disc is housed in a cartridge. The pocket-size cartridge measures 68 x 72 mm and is 5 mm thick. It is easy to carry about and store. Since the disc is protected by the cartridge, it is kept free from dust and dirt, and there is no danger of the disc being scratched or exposed to fingerprints due to the shutter which is closed at all times except while the disc is being used. All in all, these features make the minidisc extremely easy to use.

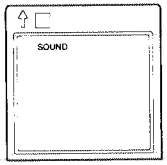


Two types of discs available

MDs come in two types: the recording MD which can be used for recording, and the play-only MD which can be used for playback only. Both types use the same system for playback: a laser beam is directed onto the disc and the signals are read out by its reflection. However, the system for recording is different.

Play-only MDs

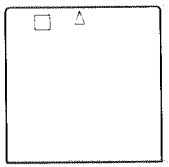
This type of MD is used for pre-recorded MDs available on the market. It cannot be used for recording. As with CDs, data is recorded by the presence or absence of small indentations called pits. A disc with this kind of recording system is called an "optical disc."



Play-only MD

Recording MDs

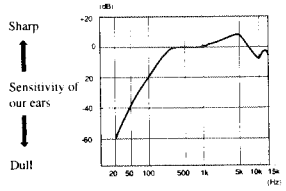
This is the "blank" type of MD which can be used for recording. Its data is recorded using magnetism which is easily processed so that recordings can be made again and again. By using a laser beam to heat spots on its surface to cancel out the magnetism, the data is recorded using a magnetic head. A disc with this kind of recording system is called a "magneto-optical disc."



Recording MD

ATRAC (Adaptive Transform Acoustic Coding)

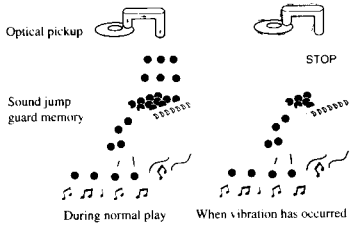
Sound contains some elements which are not actually very audible. For instance, when the sound is soft, it is hard to hear the bass and treble. Also, during or immediately after a passage of loud sound, soft sounds cannot be heard even though they may be there. A technique called ATRAC (Adaptive Transform Acoustic Coding) is used with MDs to select or dispense with sounds on the basis of our acoustic characteristics so that the data is compressed into a small quantity. It compresses the data to be recorded into about one-fifth of the original data so that it can be stored even on a small-size MD.



Sound range and sensitivity of our ears

Sound jump guard memory

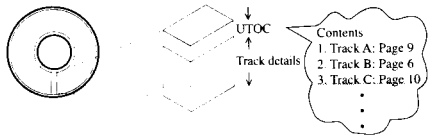
When an MD is played, a function (sound jump guard memory) operates to store the data of the track being played instantly in a memory to prevent jumps in the sound due to vibration. When the disc signals cannot be read by the optical laser because of vibration, the function uses the data in the "sound jump guard memory" to ensure that there are no breaks in the sound actually heard.



During normal play When vibration has occurred

UTOC (User Table of Contents)

In addition to the data of its tracks, a recording MD comes with the UTOC contents facility. This records the position of each track, the breaks between the tracks, the track sequence, etc., and tracks can be searched quickly by viewing these contents. During editing, all that changes is the UTOC contents: the tracks themselves need not be re-recorded.



MD (Minidisc) Error Messages

Error message	Significance	Remedy
MD BLANK DISC	An MD with nothing recorded on it has been inserted.	Replace with a pre-recorded MD unless something is to be recorded onto the blank MD.
CANNOT JOIN	An attempt has been made to join tracks which cannot be joined.	This is due to limitations on the MD system. (See page **54**.)
DISC ERROR	Trouble with MD (damage).	Replace the MD.
DISC FULL	The MD does not have enough available time. The track number has exceeded 254.	Replace with another recording MD.
DISC PROTECTED	The MD has been set to the accidental erasure prevention mode.	Slide the MD's accidental erasure prevention knob so that the hole is blocked.
EMERGENCY STOP	An error occurred during recording.	Stop operation by pressing the ■ (stop) button, and perform the operation again.
MD NO DISC	An MD has not been inserted.	Insert an MD.
NON AUDIO CANNOT COPY	An attempt was made to digitally copy a CD-ROM (or video CD, etc.).	Stop the recording.
PLAYBACK DISC	An attempt was made to record or edit a play-only MD.	Replace with a recording MD.
TRACK PROTECTED	The track is protected.	This cannot be released by this unit. Release it at the unit which originally protected the track.
SCMS CANNOT COPY	An attempt was made to digitally record a digitally recorded source.	Set to analog recording.

English

Restrictions Imposed by MDs (Minidiscs)

MDs use their own system to record information which is different from conventional cassette tapes and DAT tapes. This system has a number of restrictions which sometimes give rise to the following symptoms. These symptoms do not, however, indicate that something is wrong with the product.

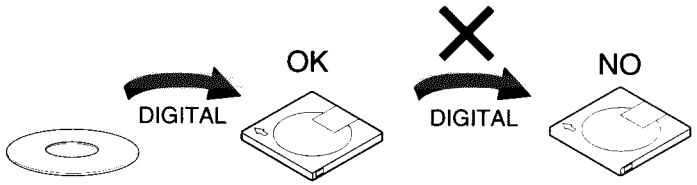
Symptom	Cause
"DISC FULL" is displayed even though the recording time displayed for the MD has not been used up.	The number of tracks which can be recorded on an MD is limited, and this has nothing to do with the recording time. Track numbers 255 and above cannot be recorded.
"DISC FULL" is displayed despite sufficient leeway in track numbers and recording time.	When some of the MD recordings are erased and replaced with new recording repeatedly, empty areas are formed on parts of the disc. When a recording is made on this kind of disc, the data of a track is divided in bits and pieces among and recorded on these empty areas. When the number of these divided areas increases, "DISC FULL" may be displayed during recording. If the data is divided so that some parts are less than 8 seconds in length, it may not be possible to use the JOIN function to join the track concerned. In addition, the remaining time will not increase even if these parts are erased. The sound of tracks which have been divided up in bits and pieces and recorded may break up during rapid advance or rapid reverse operations.
It is sometimes not possible to use the JOIN function.	
The remaining time is not increased even though tracks are deleted.	
The sound is sometimes skipped during rapid advance or rapid reverse operations.	
The recorded time and the remaining time together do not equal the recording time displayed for the MD.	Recording on an MD is not possible unless there are successive spaces at least 2 seconds in length. For this reason, a shorter recording time will be displayed for an MD with a large number of short empty areas.

Restriction on Copying Digital Material

Due to copyright and other considerations, the following restriction is now in place for MDs onto which the digital signals of CDs have been copied.

SCMS (Serial Copy Management System)

MDs can digitally record the clear sound of CDs. However, it is now not possible to copy the digital signals of an MD recorded in this way onto another MD using another unit. In other words, copies of copies cannot be made. This restriction is known as SCMS (Serial Copy Management System).
This unit is designed to comply with this restriction.



The copyright laws allow recordings to be made for the personal enjoyment of the individual user but they do not allow such recordings to be used for other any purposes without permission from the holder of the copyrights.

■ MDs on which CD sound has been recorded using this unit cannot be digitally copied by other units.

Troubleshooting

Check out the points below before requesting repairs or servicing.

	Symptom	Cause	Remedial action/check	Ref.
COMMON	No sound.	• An MD with nothing recorded on it has been inserted. ("BLANK DISC" is displayed.)	• Replace the MD on which tracks have been recorded.	20
	The time display flashes in the display window.	• A power failure has occurred or the power cord has been disconnected.	• Set the clock and re-program the timer.	45-47
CD PLAYER	Play fails to start	• The CD has been inserted upside down.	• Insert it properly with the label side facing up.	12
		• Condensation has formed on the lens.	• Turn on the power and wait for a couple of hours.	
	Specific parts are not played properly.	• The CD is scratched.	• Replace the CD.	
MD RECORDER	The inserted MD is ejected.	• The MD was not inserted properly.	• Re-insert the MD by pushing it gently until it clicks into position.	20
	MD cannot be inserted.	• An MD has already been inserted.	• Press the ⏏ button, eject the MD, and insert another MD.	21
	No recording.	• The MD is set to the accidental erasure prevention mode ("DISC PROTECTED" is displayed).	• Slide the accidental erasure prevention knob so that the hole is blocked.	27
TIMER	Timer fails to start.	• Present time is not correct.	• Set the time properly.	45
		• The timer display (⏲) fails to appear.	• Press the TIMER button so that the timer display (⏲) appears.	
REMOTE CONTROL	No remote control operations.	• The dry batteries in the remote control have discharged.	• Replace them with two fresh batteries (R03 or size "AAA"or UM4).	8
		• The remote control sensor is exposed to direct sunlight or some other intense source of light.	• Operate the remote control where it will not be exposed to direct sunlight, a lighting fixture or some other intense source of light.	9

• If the unit fails to operate properly even when the remedial action suggested above has been taken:

This unit uses a microcomputer to perform a large number of operations. If it fails to operate no matter which button is pressed, disconnect the power cord, and then wait a few moments before re-connecting it. Then set the time and re-program the timer.

■ If something important is going to be recorded, always test-record first to check that the recording turns out properly before proceeding with the actual recording.
■ The manufacturer assumes no liability whatsoever for any damages resulting from missed opportunities while conducting recording, playback or CD play operations due to malfunctioning of or trouble in the unit, or for any incidental damage.

English

Main Specifications

The unit's specifications and exterior are subject to change without notice due to improvements.

CD Player Section

System	Compact disc digital audio system
Readout system	Non-contact optical readout (using semiconductor laser)
Error correction system	CIRC
Number of channels	2
Pitch control	±12%
Total harmonic distortion (1 kHz)	0.009%
Dynamic range (1 kHz)	90 dB
Signal-to-noise ratio	94 dB
Frequency response	8Hz ~ 20 kHz
Wow and flutter	Less than measurable limit

MD Recorder Section

System	Mini-disc digital audio system
Recording system	Magnetic field modulation overwrite system
Signal readout system	Non-contact optical system using semiconductor laser (λ = 780nm)
Sound compression system	ATRAC system
Number of channels	2
Wow and flutter	Less than measurable limit
Sampling frequency	44.1 kHz
Frequency response	8 Hz ~ 20 kHz
Inputs: Analog (LINE IN)	Minimum input level: 300mV (Full scale –12 dB)/50 kΩ
Digital (optical)	Input level: –23 dBm – –15 dBm
Microphone	Minimum input level: 3 mV (Full scale –12 dB)/600-10 kΩ matching impedance
Dynamic range (1 kHz)	88 dB (during play)
Signal-to-noise ratio	88 dB (during play)

Timer Section

Timer system	Once-a-day operation (ON/OFF timer)
Clock display	12-hour display

Common Specifications

Output connectors: Analog	LINE x 1 set, 2 V/5 kΩ (Full scale)
	Headphones x 1, 4 mW/32 Ω, 8 Ω – 1 kΩ matching impedance
Digital	OPTICAL x 1, –21 dBm ~ –15 dBm
Other connectors	COMPU LINK-3/SYNCHRO x 2
	TEXT COMPU LINK x 2
Power requirements	AC 120V (60 Hz)
Power consumption	15 W in power ON mode; 6 W in STANDBY mode
Dimensions	17-3/16" x 5 x 12-1/2" inches (W x H x D)
	(435 x 127 x 316 mm)
Mass	Approx. 13.3 lbs (6.0 kg)

Accessories

Remote control (RM-XU301U) (1)
R03, size "AAA" or UM4 dry batteries (to check operation of remote control) (2)
Pin cords (2)
COMPU LINK-3 cable (1)
TEXT COMPU LINK cable (1)

- **This unit is licensed under the U.S. and foreign patents of Dolby Laboratories Licensing Corporation.**

Removal of Main Parts

■ Removing the Top Cover (See Fig. 1 ~3)

1. Turn the main unit around left side.
2. Remove the two screws ① retaining the top cover.
3. Turn the main unit around right side.
4. Remove the two screws ② retaining the top cover.
5. Turn the main unit around back side.
6. Remove the two screws ③ retaining the top cover.
7. Take the top cover off from the main unit.

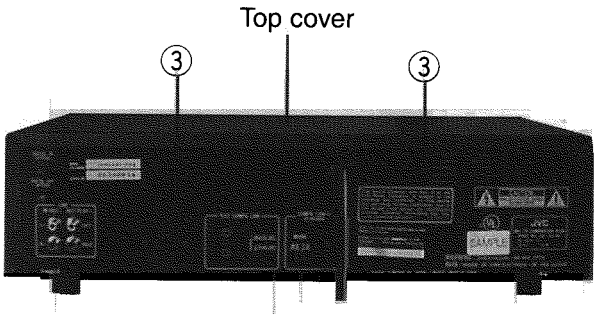


Fig. 3

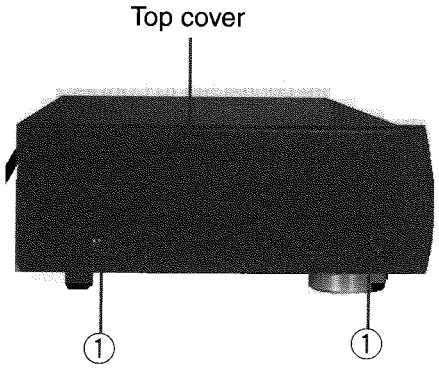


Fig. 1

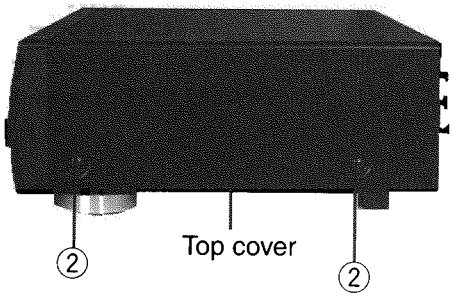


Fig. 2

■ Removing the MD Mechanism Assembly (See Fig. 4)

1. Remove the four screws ④ retaining the MD mechanism assembly.
2. Remove the one screw retaining the reset board. (#1- #2500 : J only)
3. Disconnect the card wire connected to connector CN801 on the main board.
4. Take the MD mechanism assembly off from the main unit.

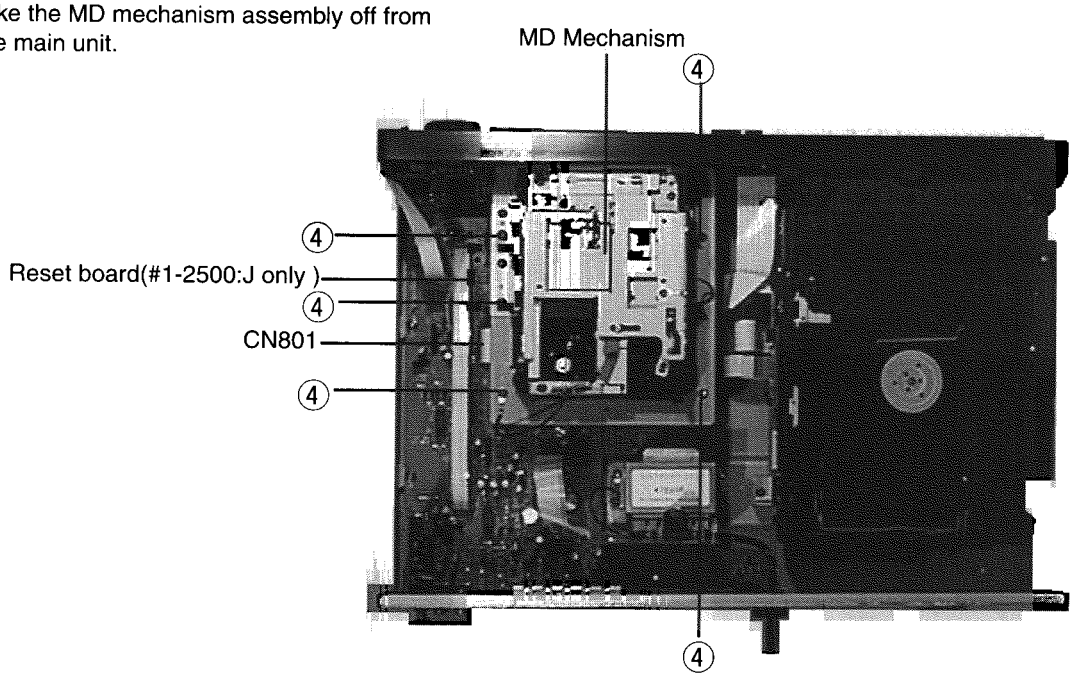


Fig. 4

■ Removing the Front Panel Assembly
(See Fig. 5 ~8)

1. Disconnect the card wire connected to connector CN724 on the Mic. & phones jack board.
2. Disconnect the card wire connected to connector CN502 on the main board .
3. Disconnect the card wire connected to connector CN841 on the main board .
4. Disconnect the card wire connected to connector CN501 on the main board .
5. Remove the one screw ⑤ retaining the Mic. & phones jack board.

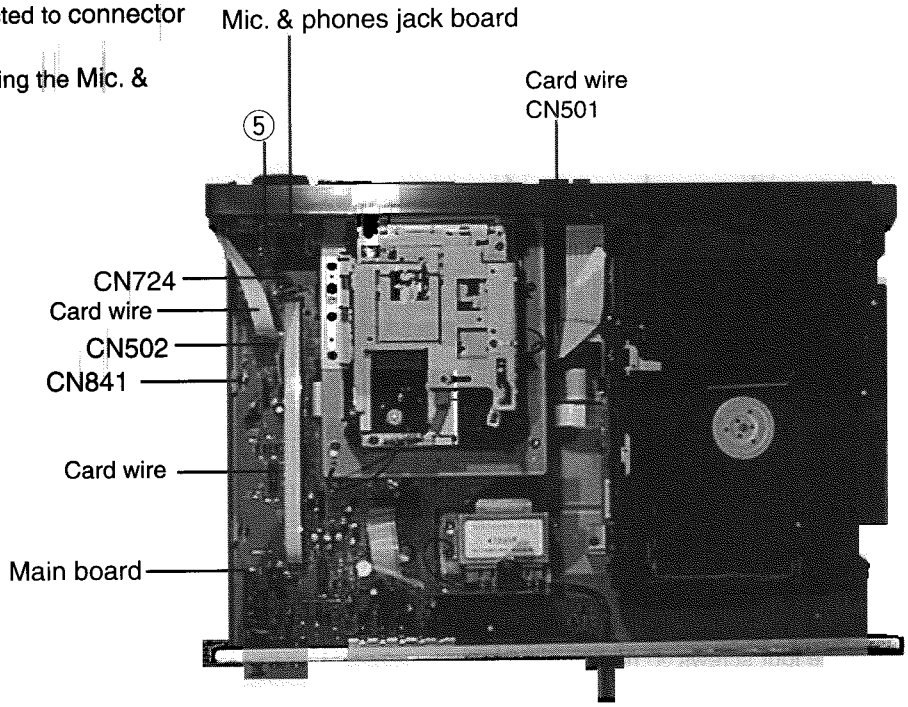


Fig. 5

5. Turn the main unit around bottom side.
6. Remove the three screws ⑥ retaining the front panel assembly.
7. Turn the main unit around right side.
8. Disengage the one engagement ⓐ fixting the front panel assembly.
9. Turn the main unit around left side.
10. Disengage the one engagement ⓑ fixting the front panel assembly.
11. Take the front panel assembly off from the main unit.

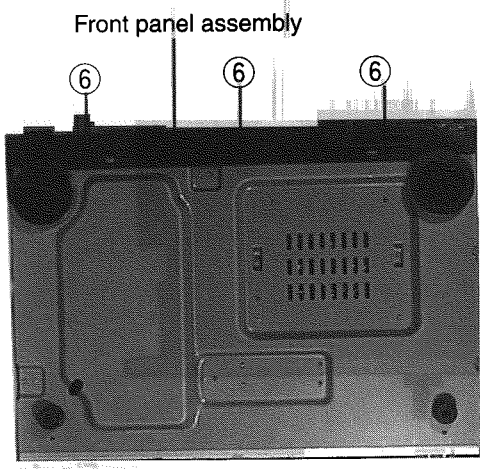


Fig. 6

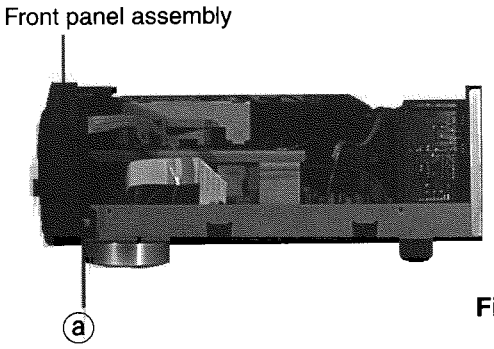


Fig. 7

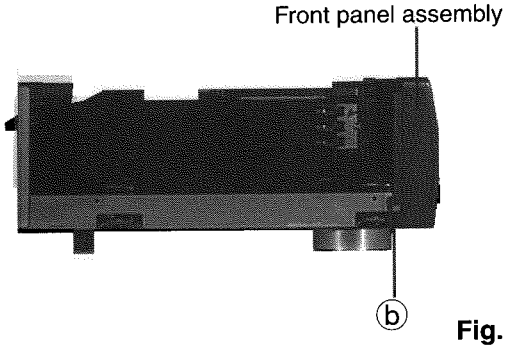


Fig. 8

■ Removing the CD Changer Mechanism Assembly (See Fig. 9)

1. Disconnect the card wire connected to connector CN811 on the main board.
2. Disconnect the card wire connected to connector CN504 on the main board.
3. Remove the four screws ⑦ retaining the CD changer mechanism assembly.
4. Take the CD changer mechanism assembly off from the bottom cover.

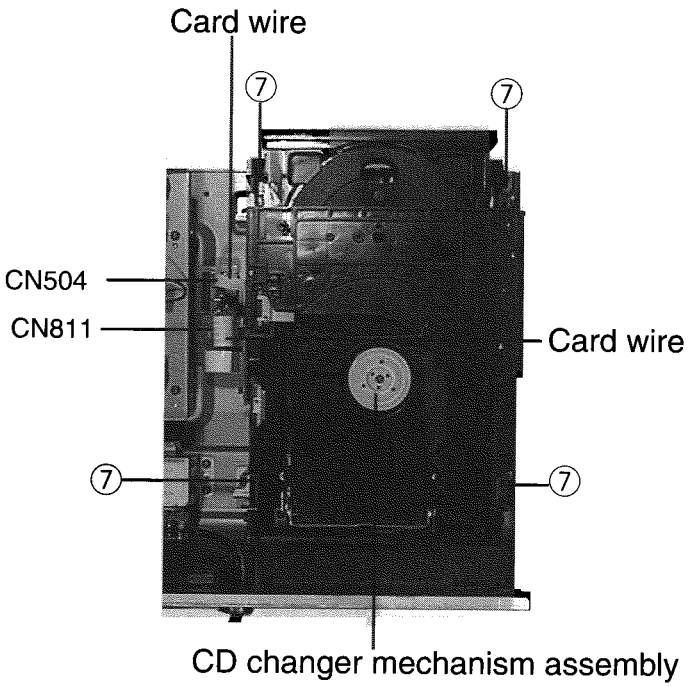


Fig. 9

■ Removing the Main Board (See Fig. 10,11)

1. Disconnect the flat wire FW901 connected to connector CN901, CN902 on the main board.
2. Remove the four screws ⑧ retaining the main board.
3. Remove the eight screws ⑨ retaining the main board from the rear panel.
4. Remove the three screws ⑩ from the rear panel.
5. Take the rear panel off.
6. Take the main board off.

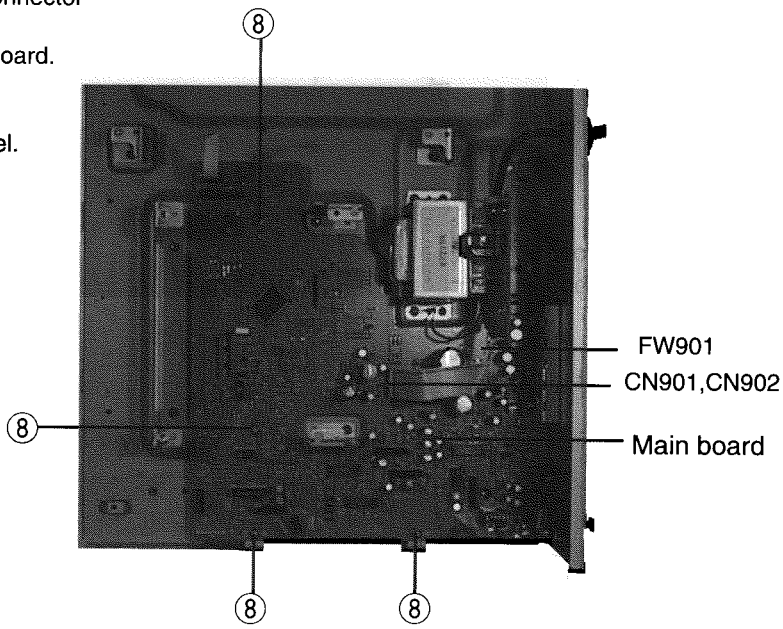


Fig. 10

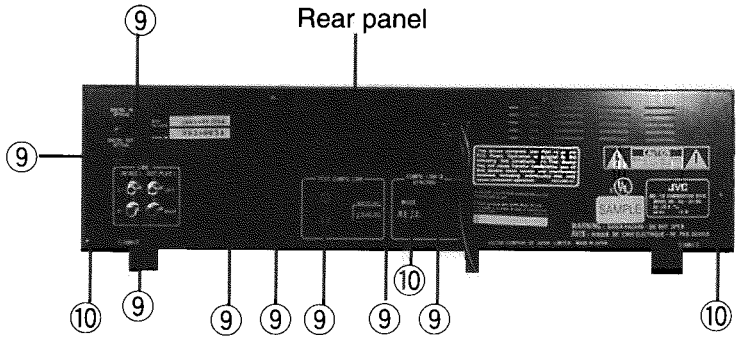


Fig.11

■ Removing the Jog Dial Board (See Fig. 12,13)

1. Remove the Front panel assembly.
2. Remove the two screws ⑪ retaining the jog dial board.
3. Pull the jog dial board out.

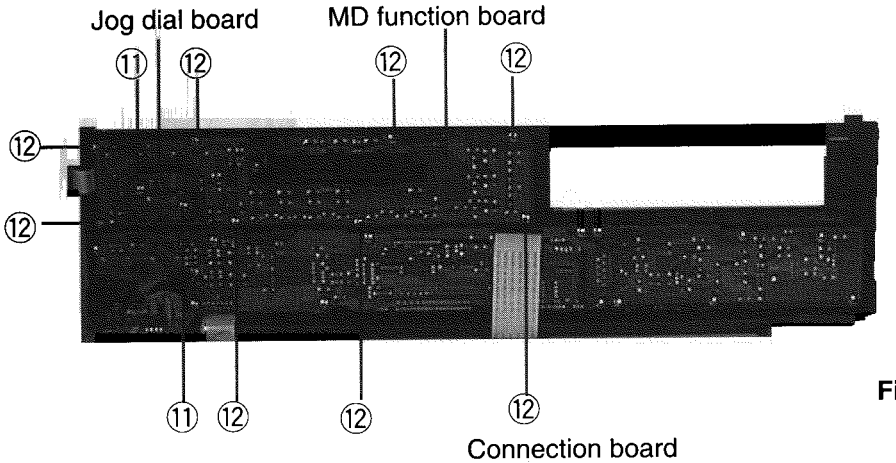


Fig.12

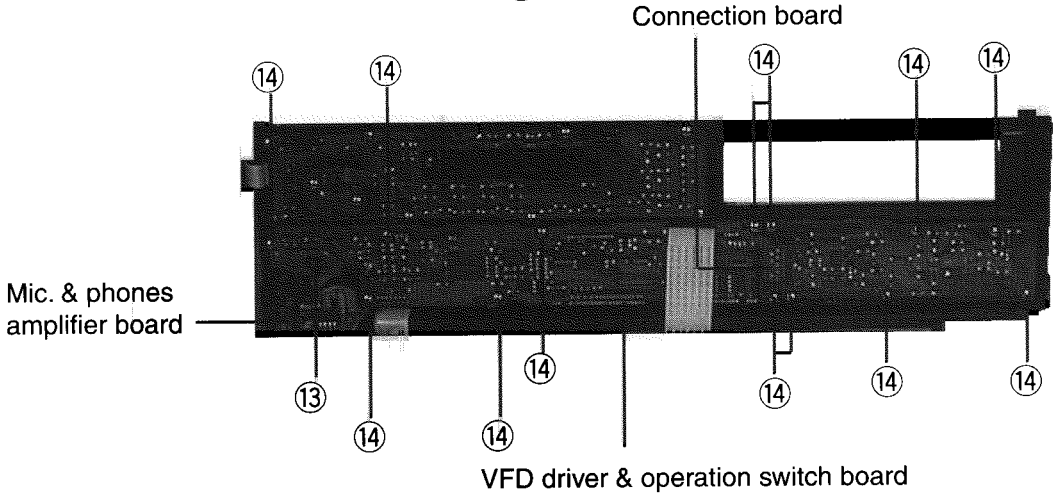


Fig.13

■ Removing the MD Function Board (See Fig. 12,13)

1. Remove the front panel assembly.
2. Remove the jog dial board.
3. Remove the eight screws ⑫ retaining the MD function board.
4. Take the MD function board off.

■ Removing the Mic & Phones Amplifier Board (See Fig. 12,13)

1. Remove the front panel assembly.
2. Remove the one screw ⑬ retaining the mic. & phones amplifier board.
3. Take the mic. & phones amplifier board off.

■ Removing the VFD Driver & Operation Switch Board (See Fig. 12,13)

1. Remove the front panel assembly.
2. Remove the mic. & phones amplifier board.
3. Remove the connection board.
3. Remove the 13th screws ⑭ retaining the VFD driver & operation switch board.
4. Take the VFD driver & operation switch board off.

≪CD Traverse Mechanism Type:VC3 Section≫

■Removing the CD Servo control board (See Fig.1)

1.Remove the metal cover.
2.Remove the CD changer mechanism assembly.
3.From bottom side the CD changer mechanism assembly, remove the two screws 1 retaining the CD servo control board.
4.Absorb the four soldered positions "M" of the right and left motors with a soldering absorber.
5.Pull out the earth wire on the CD changer mechanism assembly.
6.The two screws A is removed and C.B.holder is detached.
7.Disconnect the connector CN854 on the CD servo control board.
8.Disconnect the card wire CN601 and the connector CN801 on the CD servo control board.

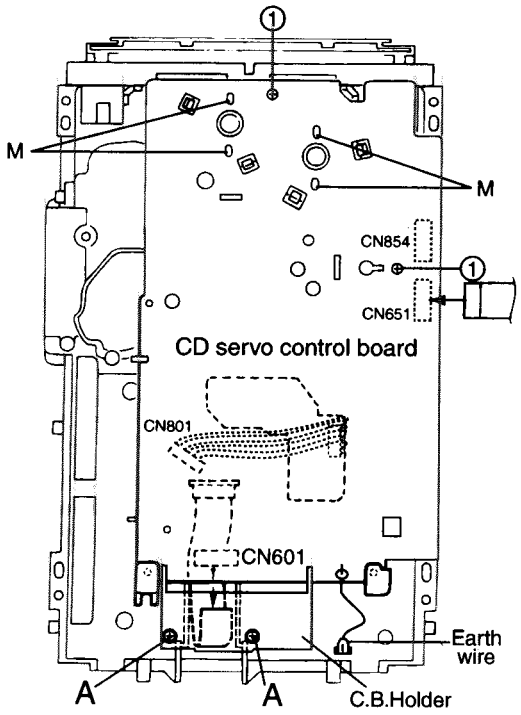


Fig.1

■Removing the CD tray assembly (See Fig.2~4)

1. Remove the front panel assembly.
2. Remove the CD changer mechanism assembly.
3. Remove the CD Servo control board.
4. From the T.bracket section "B" and clamper base section "C" , remove both of the edges fixing the rod(See Fig.2 and 3).
5. Remove the screw 2 retaining the Disc stopper (See Fig.3).
6. Remove the three screws 3 retaining the T.bracket (See Fig.3).
7. Remove the screws 4 retaining the clamper assembly (See Fig.3).
8. From the left side face of the chassis assembly, remove the one screw 5 retaining both of the return spring and lock lever(See Fig. 4).
9. By removing the pawl at the section "D" fixing the return spring, dismount the return spring(See Fig.4).
10. Remove the three lock levers(See Fig.4).

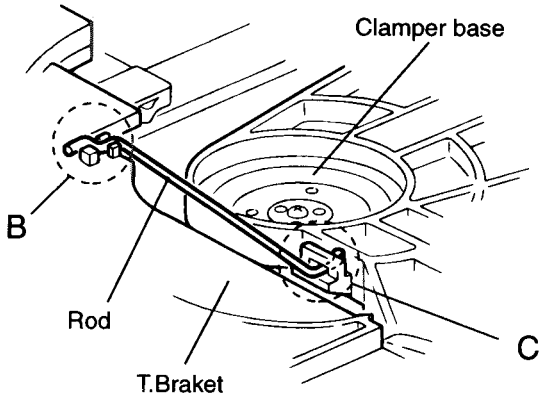


Fig.2

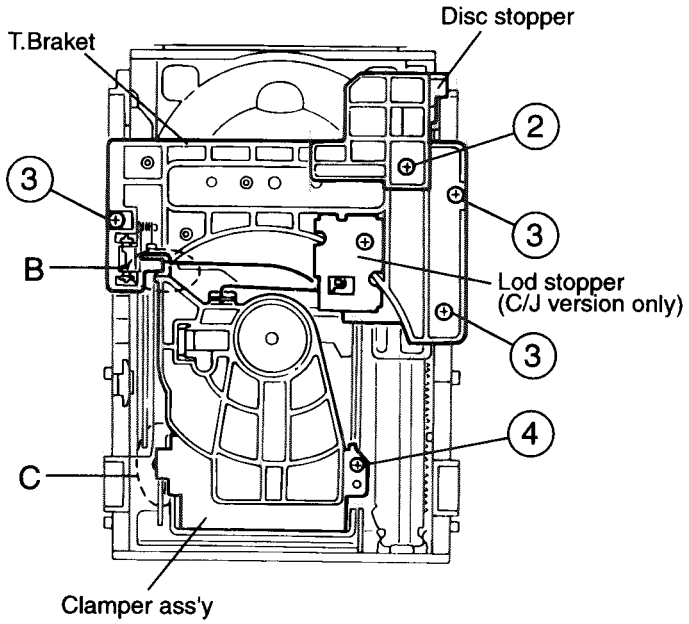


Fig.3

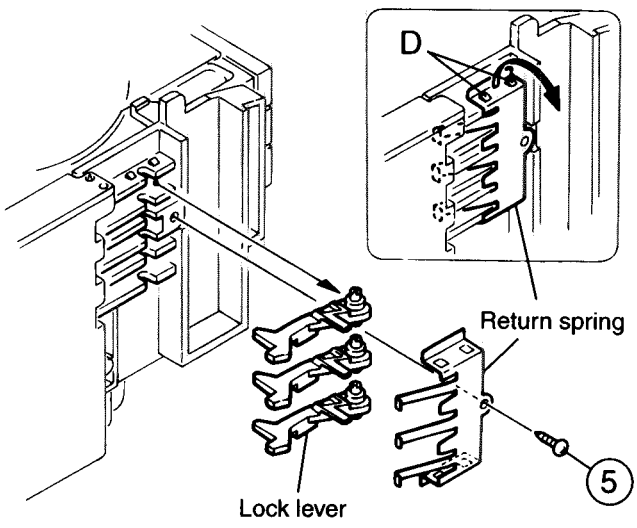


Fig.4

11. Check whether the lifter unit stopper has been caught into the hole at the section E of CD tray assembly as shown in Fig.5.
12. Make sure that the driver unit elevator is positioned as shown in Fig.6 from to the second or fifth hole on the left side face of the CD changer mechanism assembly.

[Caution] In case the driver unit elevator is not at above position, set the elevator to the position as shown in Fig.7 by manually turning the pulley gear as shown in Fig.8.

13. Manually turn the motor pulley in the clockwise direction until the lifter unit stopper is lowered from the section E of CD tray assembly(See Fig.8).
14. Pull out all of the three stages of CD tray assembly in the arrow direction F until these stages stop (See Fig.6).
15. At the position where the CD tray assembly has stopped, pull out the CD tray assembly while pressing the two pawls G and G on the back side of CD tray assembly(See Fig.9). In this case, it is easy to pull out the assembly when it is pulled out first from the stage CD tray assembly.

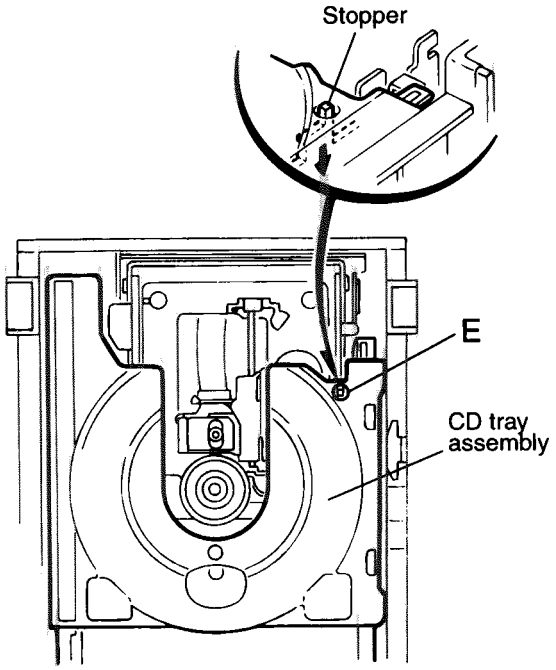


Fig.5

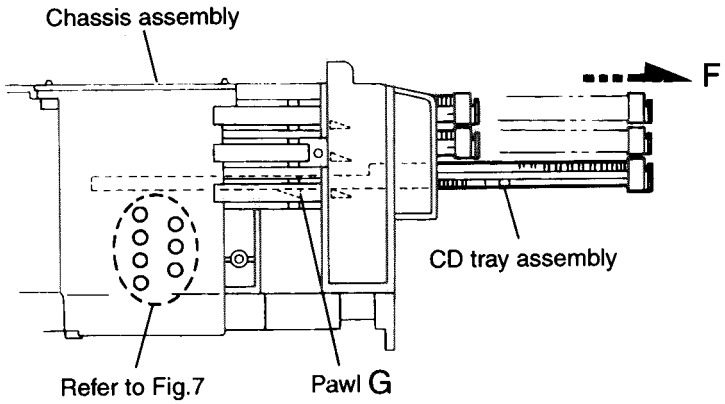


Fig.6

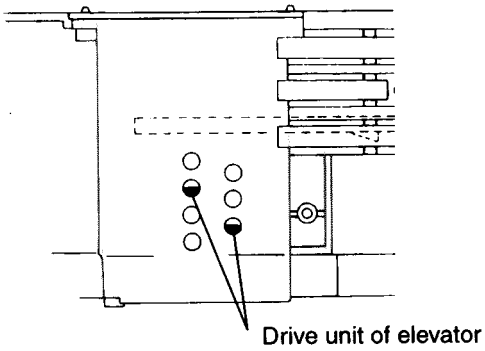


Fig.7

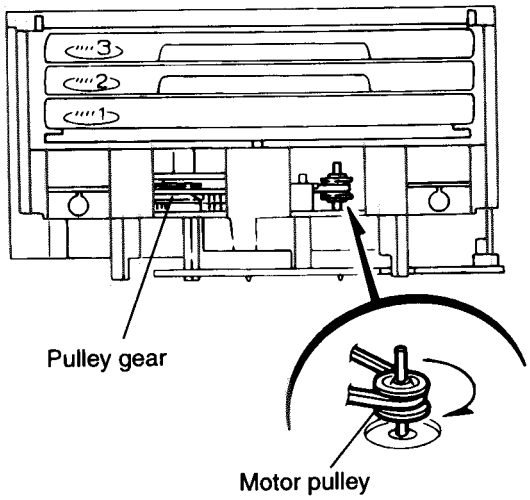


Fig.8

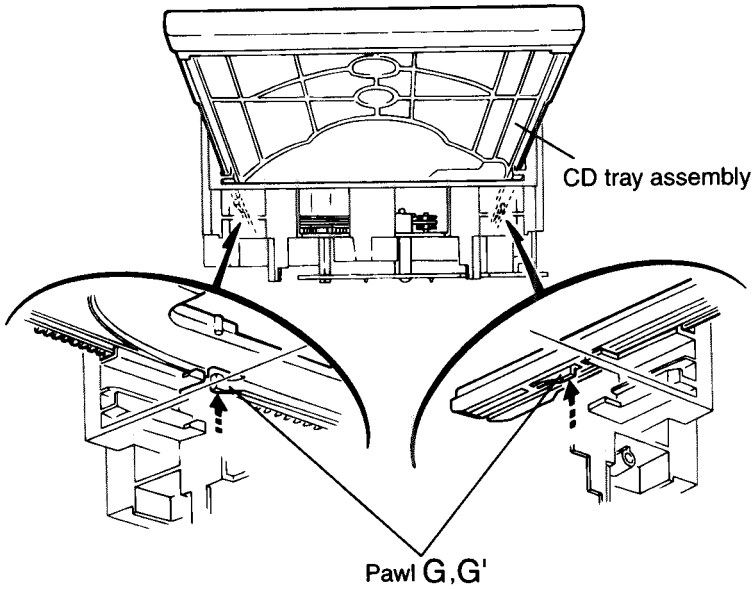


Fig.9

■Removing the CD loading mechanism assembly(See Fig.10)

1. While turning the cams R1 and R2 assembly in the arrow direction "H" , align the shaft "I" of the CD loading mechanism assembly to the position shown in
2. Fig.10.
   Remove the four screws 6 retaining the CD loading mechanism assembly.

■Removing the CD traverse mechanism (See Fig.11 and 12)

1. For dismounting only the CD traverse mechanism without removing the CD loading mechanism assembly, align the shaft "J" of the CD loading mechanism assembly to the position shown Fig.11 while turning the cam R1 and R2 assembly in the arrow direction "K" .
2. By raising the CD loading mechanism assembly in the arrow direction "L" , remove the assembly from the lifter unit

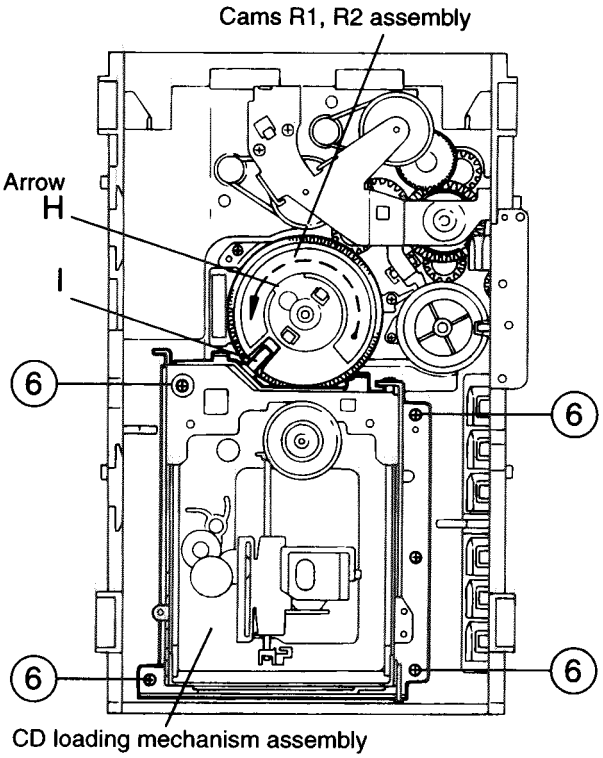


Fig.10

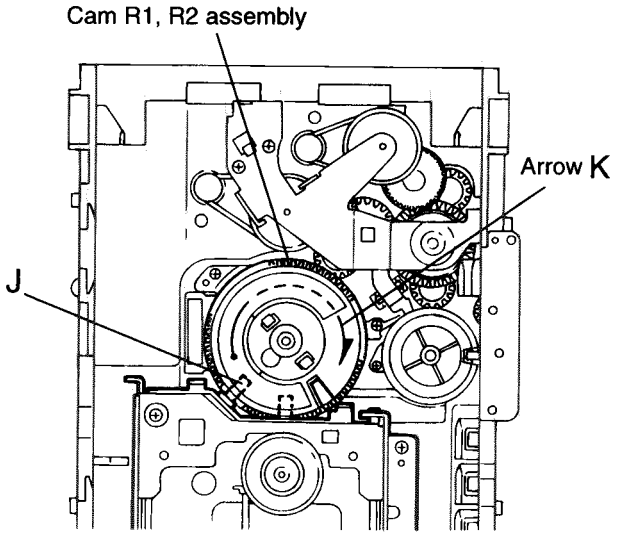


Fig.11

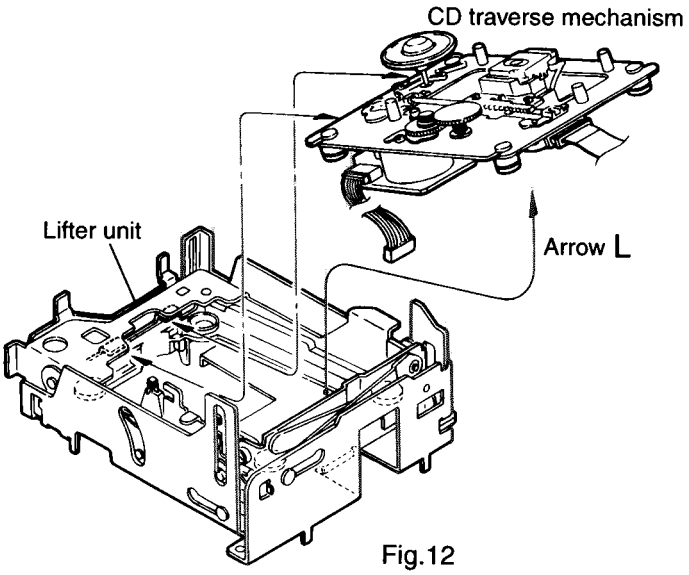


Fig.12

■Removing the CD pick unit (See Fig.13)

1. Move the cam gear in the arrow direction a . Then, the CD pickup unit will be moved in the arrow direction b .
2. According to the above step, shift the CD pickup unit to the center position.
3. While pressing the stopper retaining the shaft in the arrow direction c , pull out the shaft in the arrow direction d .
4. After dismounting the shaft from the CD pickup unit, remove the CD pickup unit

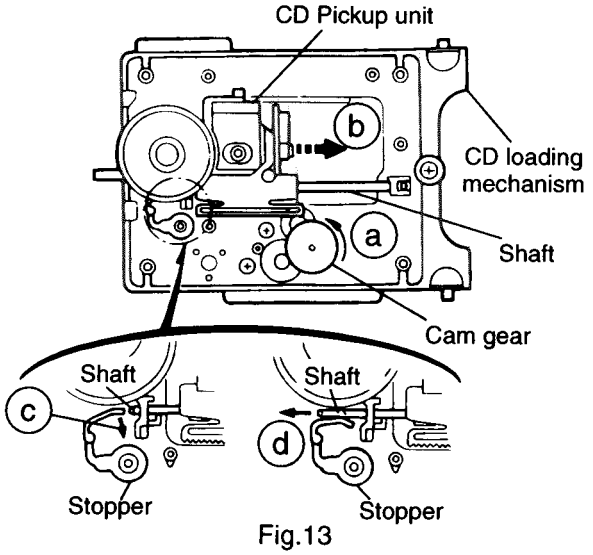


Fig.13

■Removing the actuator motor board (See Fig.14, 15)

1. Absorb the four soldered positions "M" of the right and left motors with a soldering absorber(See Fig.14).
2. Remove the two screws 7 retaining the actuator motor board(See Fig.14).
3. Remove the two screws 8 retaining the tray select switch board(See Fig.15).

■Removing the cam unit (See Fig.15 ~18)

1. Remove the CD loading mechanism assembly.
2. While turning the cam gear L, align the pawl "N" position of the drive unit to the notch position(Fig.16) on the cam gear L.
3. Pull out the drive unit and cylinder gear(See Fig.17).
4. While turning the cam gear L, align the pawl "O" position of the select lever to the notch position(Fig.18) on the cam gear L.
5. Remove the four screws 9 retaining the cam unit(cam gear L and cams R1/R2 assembly)(See Fig.18).

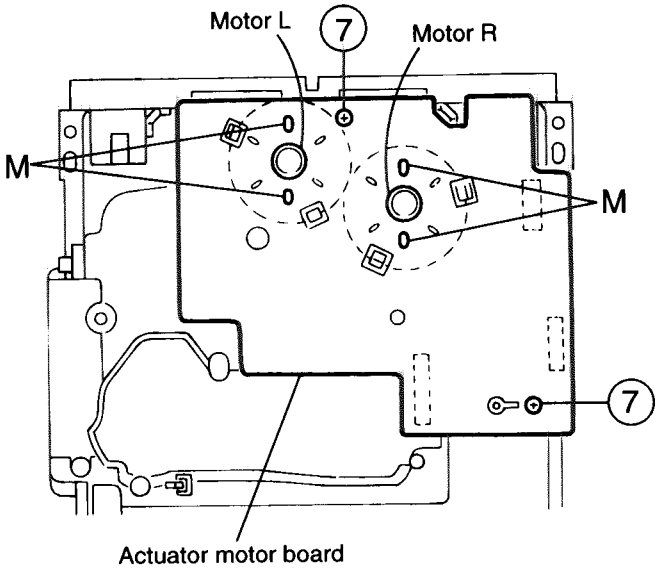


Fig.14

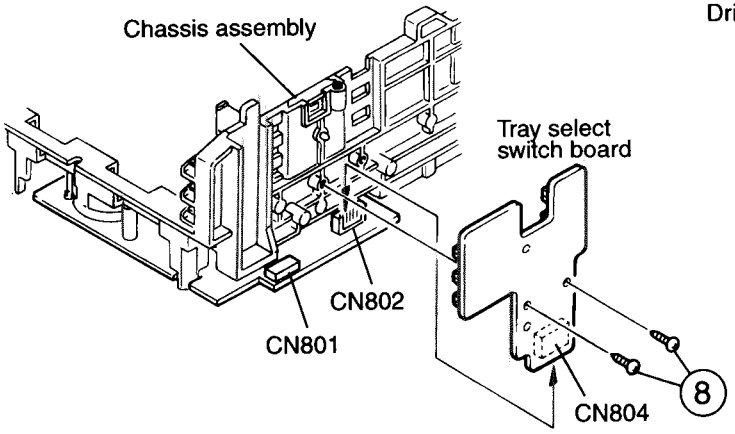


Fig.15

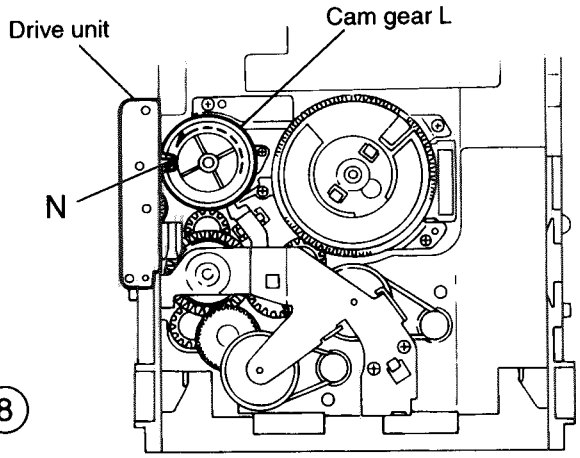


Fig.16

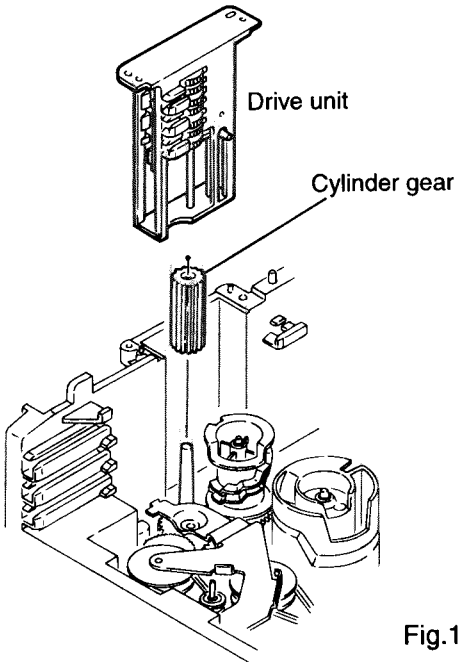


Fig.17

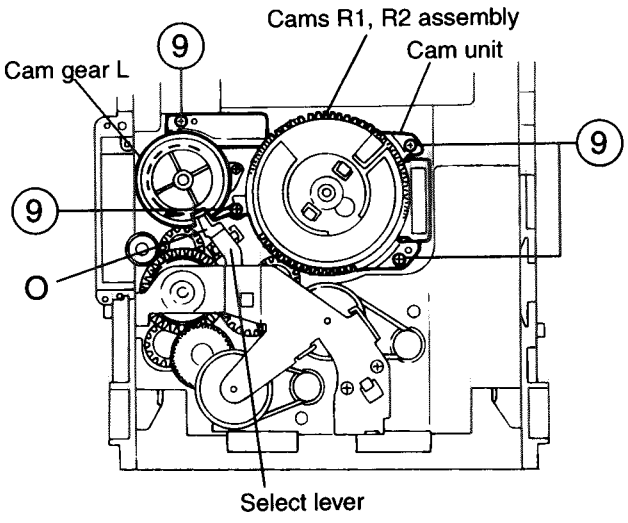


Fig.18

■Removing the actuator motor and belt (See Fig.19~22)

1. Remove the two screws 10 retaining the gear bracket (See Fig.19).
2. While pressing the pawl "P" fixing the gear bracket in the arrow direction, remove the gear bracket (See Fig.19).
3. From the notch "Q section" on the chassis assembly fixing the edge of gear bracket, remove and take out the gear bracket(See Fig. 20).
4. Remove the belts respectively from the right and left actuator motor pulleys and pulley gears(See Fig. 19).
5. After turning over the chassis assembly, remove the actuator motor while spreading the four pawls "R" fixing the right and left actuator motors in the arrow direction(See Fig. 21).

[Note] When the chassis assembly is turned over under the conditions wherein the gear bracket and belt have been removed, then the pulley gear as well as the gear, etc. constituting the gear unit can possibly be separated to pieces. In such a case, assemble these parts by referring to the assembly and configuration diagram in Fig. 22.

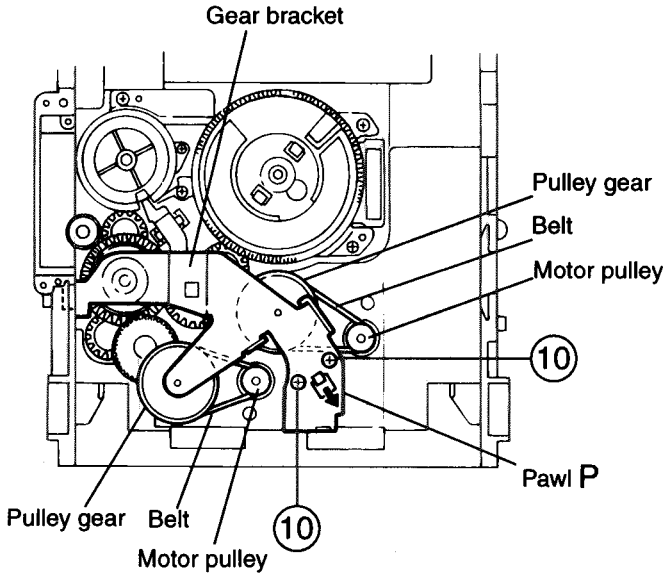


Fig.19

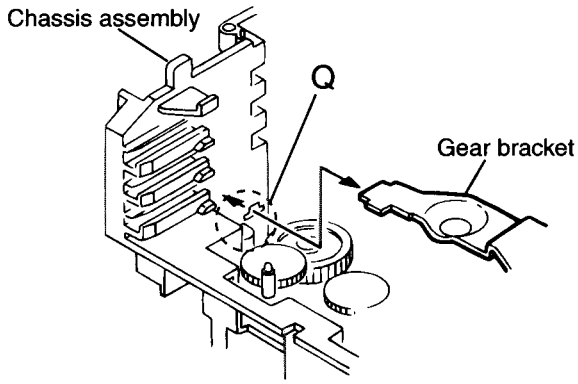


Fig.20

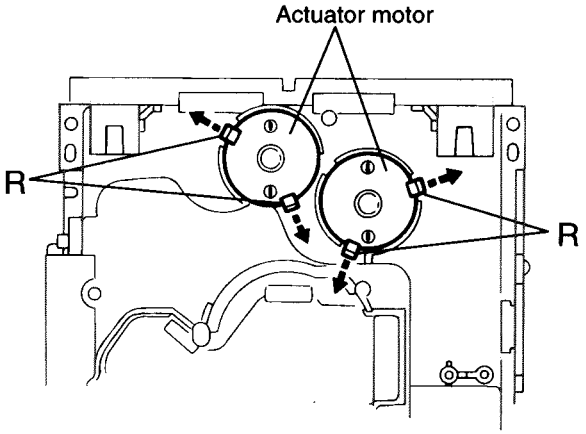


Fig.21

Assembly and Configuration Diagram

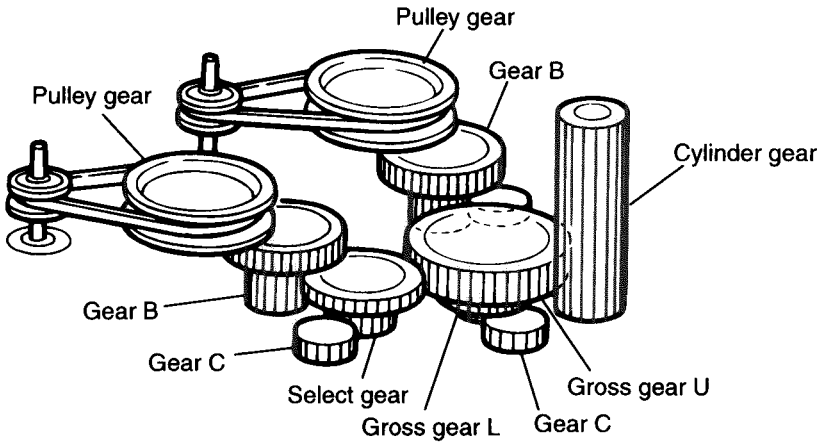


Fig.22

■Removing the cams R1/R2 assembly and cam gear L(See Fig.23)

1. Remove the slit washer fixing the cams R1 and R2 assembly.
2. By removing the two pawls "S" fixing the cam R1, separate R2 from R1.
3. Remove the slit washer fixing the cam gear L.
4. Pull out the cam gear L from the C.G. base assembly.

■Removing the C.G. base assembly (See Fig.23 and 24)

Remove the three screws 11 retaining the C.G. base assembly.

[Caution] To reassemble the cylinder gear, etc.with the cam unit (cam gear and cans R1/R2 assembly), gear unit and drive unit, align the position of the pawl "N" on the drive unit to that o f the notch on the cam gear L. Then, make sure that the gear unit is engaged by turning the cam gear L (See Fig. 24).

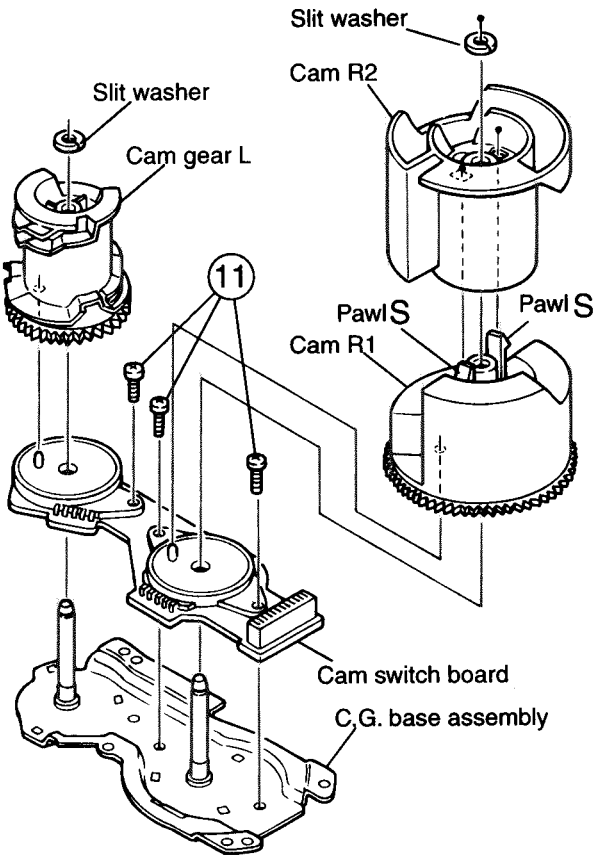


Fig.23

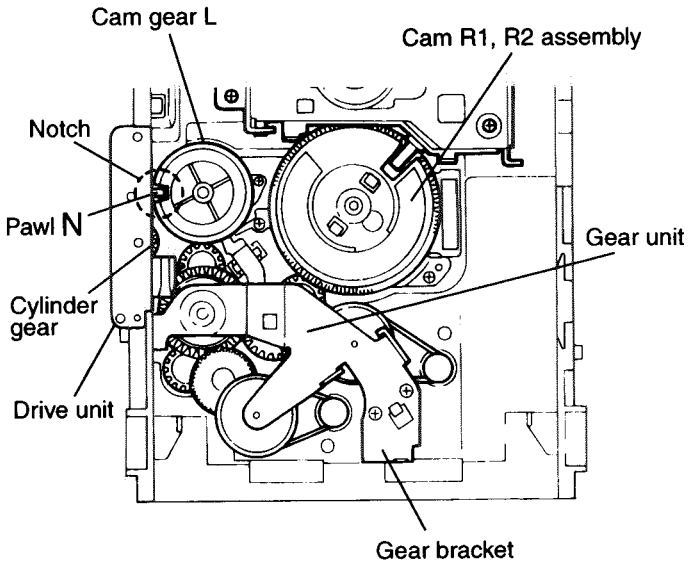


Fig.24

< MD Mechanism Section >

■ Removing the MD traverse mechanism

(See Figs. 1 ~ 3)

1. After dismounting the MD mechanism assembly, remove the MD servo control board.
2. Remove the screw Ⓙ retaining the slide bracket.
3. Remove the two screws Ⓖ retaining the MD traverse mechanism, and take out the bracket.
4. From the magnetic head, remove the two wires soldered to the loading printed circuit board.

(Caution) The MD traverse mechanism should be dismounted so carefully that the magnetic head is not caught into and damaged by any other parts. Especially make sure that the pickup is located inside. When removed from the peripheral, the magnetic head will be caught into the other parts.

5. While sliding the slide bracket in the direction of arrow ②, remove the MD traverse mechanism.

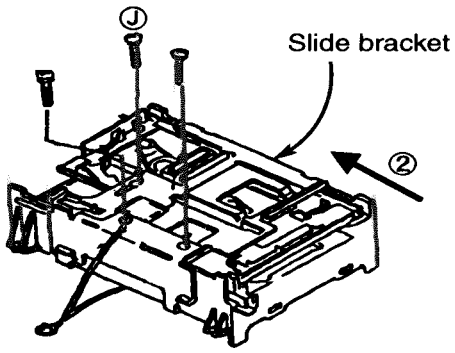


Fig. 1

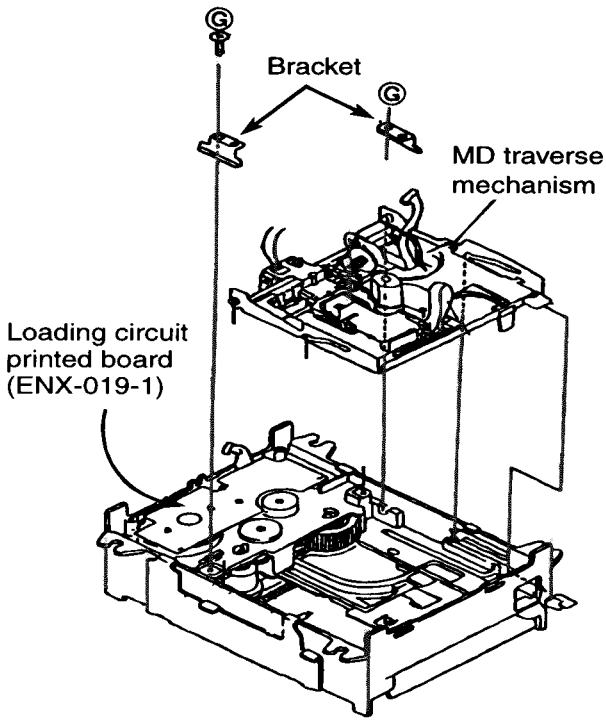
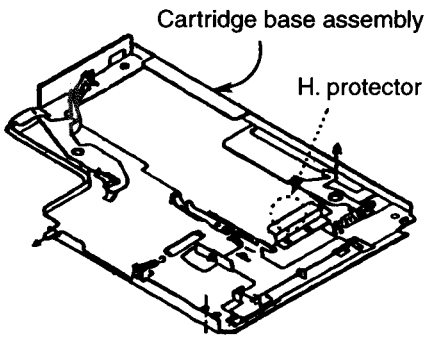
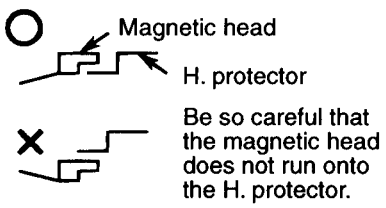


Fig. 2

Caution for removing the MD traverse mechanism





Make sure that the magnetic head is not caught into the H. protector of the cartridge base assembly.

Be so careful that the magnetic head does not run onto the H. protector.

Fig. 3

■ Removing the magnetic head unit

(See Figs. 4 and 5)

1. Remove the MD traverse mechanism.
2. Remove the two screws (K) retaining the H. joint. (See Fig. 4)
3. Pull out the magnetic head unit so carefully so as not to come into contact with the pickup lens.
4. Pull out the H. shaft from the side on which there is no T. spring. (See Fig. 5)

(Caution) When mounting the H. shaft, be sure to press it in so carefully that the shaft is not bent (Regarding the press-in dimensions, see Fig. 26 below). Otherwise, an appropriate angle of the magnetic head cannot be obtained.

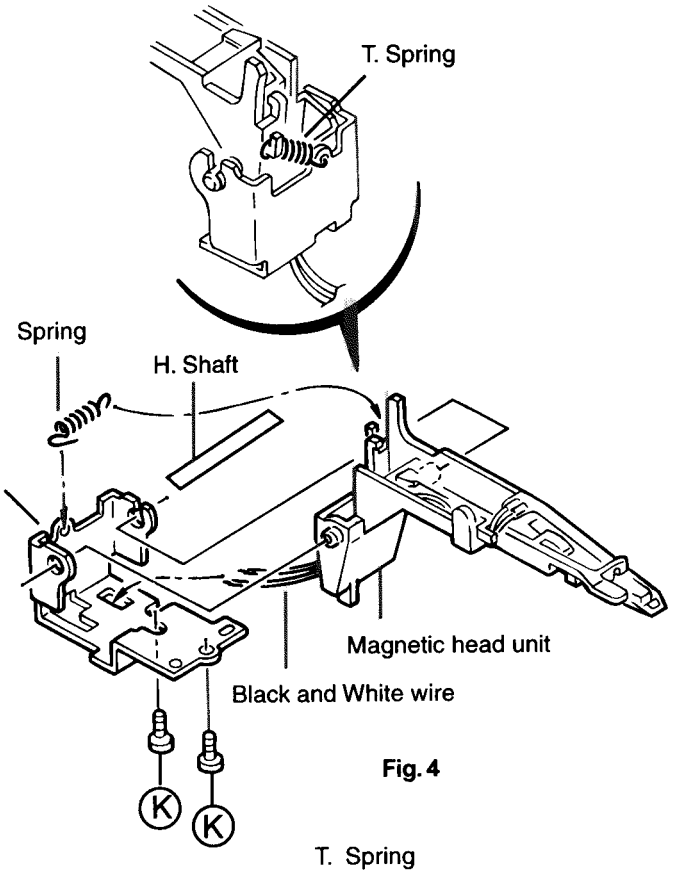


Fig. 4

■ Removing the MD pickup

(See Figs. 4 ~ 6)

1. Remove the MD traverse mechanism.
2. Remove the two screws (K) retaining the magnetichead unit (See Fig. 6).
3. After removing the pawl, pull the guide shaft in the direction of arrow and remove the pickup together with the guide shaft.

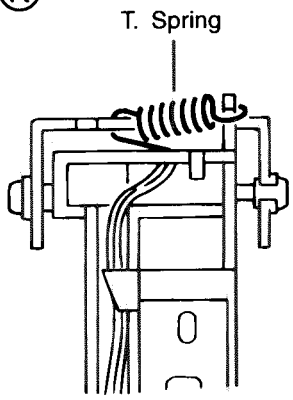


Fig. 5

■ Mounting the MD pickup

(See Fig. 6)

1. Insert the portion (I) of the pickup into the guide and mount the guide shaft.
2. Confirm that the guide shaft is fixed with the pawl.

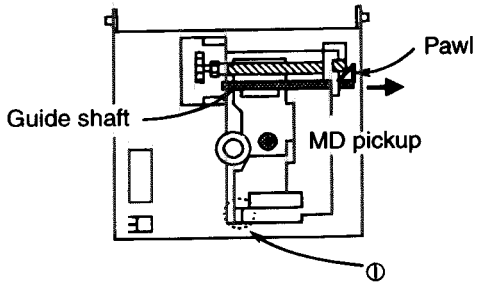


Fig. 6

■ Removing the feed motor assembly

(See Fig. 7)

1. Remove the MD traverse mechanism.
2. After turning over the MD traverse mechanism, remove the two wires (black and white wires) soldered to the printed circuit board.
3. Remove the one screw Ⓛ retaining the motor bracket.
4. After removing the pawl ② from the chassis base, dismount the feed motor assembly.

■ Removing the spindle motor assembly

(See Figs. 4 ~ 6)

1. Remove the MD traverse mechanism.
2. Pull out the turntable assembly.
3. After turning over the MD traverse mechanism, remove the two wires (red and black wires) soldered to the printed circuit board.
4. Remove the two screws Ⓚ retaining the spindle motor assembly.

(Caution) Whenever the spindle motor assembly is changed, the turntable assembly should also be changed. It is impossible reuse the turntable assembly.

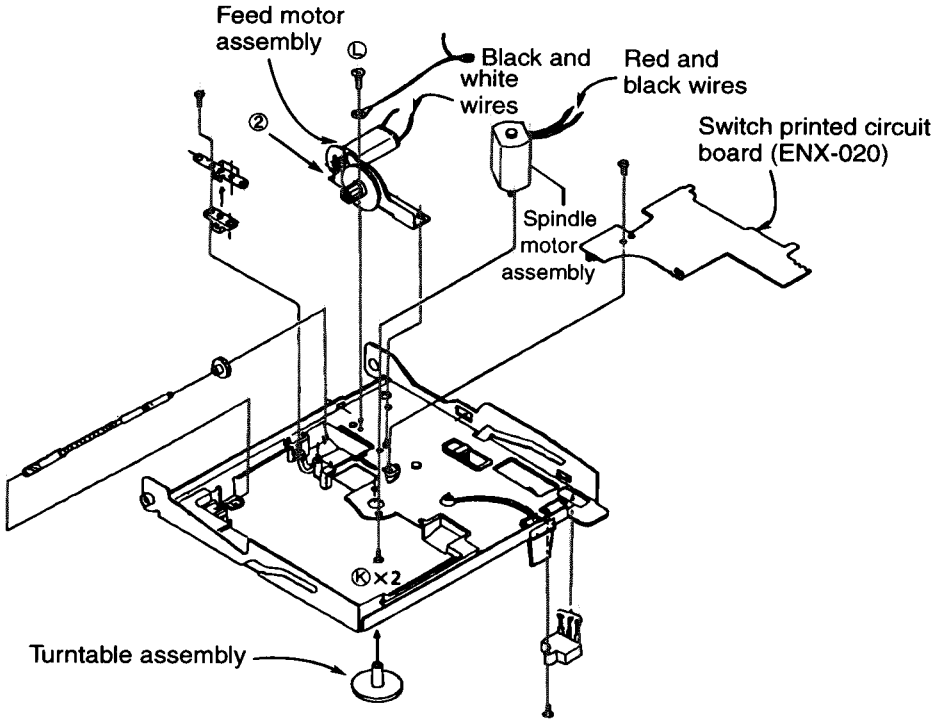


Fig. 7

■ Removing the slide bracket

(See Fig. 8)

1. Remove the MD mechanism assembly.
2. Remove the two screws Ⓗ retaining the slide bracket (L).
3. Remove the slide bracket (R) after removing the slide bracket (L).

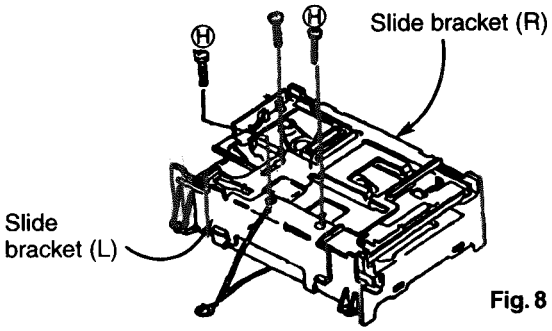


Fig. 8

■ Removing the CAR. base assembly

(See Figs. 9 ~ 11)

1. After dismounting the MD mechanism assembly, remove the MD servo Control board.
2. Remove both of the slide brackets (L) and (R). (See Fig. 8)
3. Remove the three screws Ⓜ retaining the CAR. base assembly. (See Fig. 10)
4. After removing the spring ⓓ, dismount the CAR. base assembly and rack. (See Fig. 10)

(Caution) The CAR. base assembly and rack should be assembled according to the methods in Figs. 10 and 11.

[Mounting of rack]
While passing the rack under the pawl of the shutter lever ⓐ, mount the rack as indicated below:

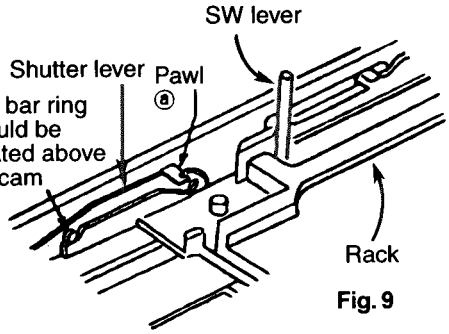


Fig. 9

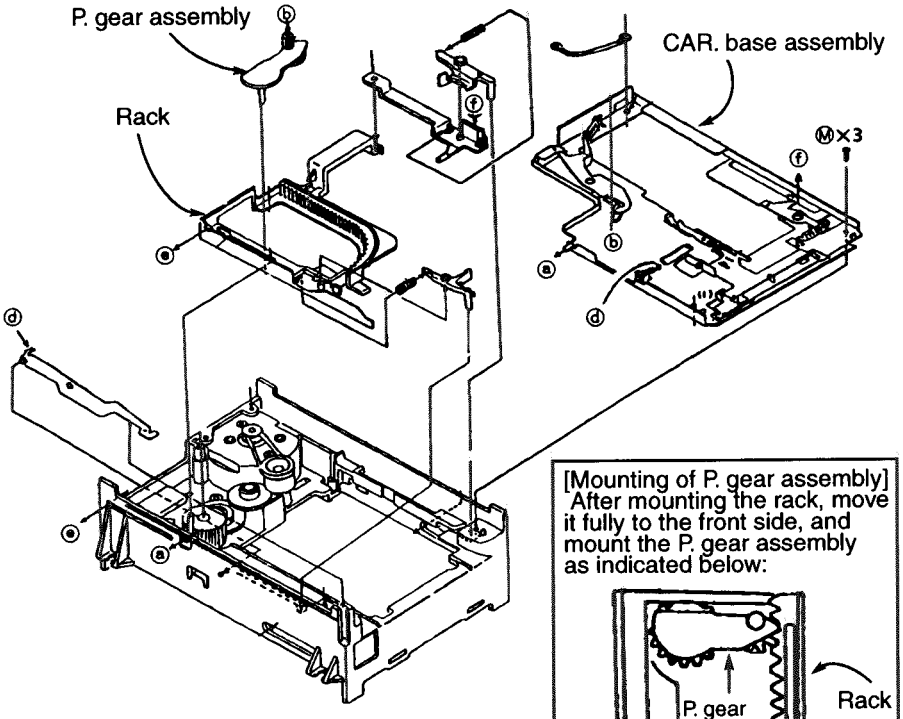


Fig. 10

[Mounting of P. gear assembly]
After mounting the rack, move it fully to the front side, and mount the P. gear assembly as indicated below:

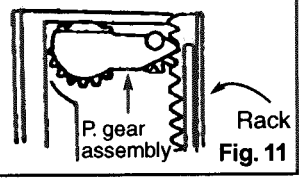


Fig. 11

■ Removing the loading motor assembly

(See Fig. 12)

1. Remove the CAR. base assembly and rack.
2. Remove the two screws Ⓝ retaining the loading motor assembly.
3. Remove the loading motor assembly soldered to the loading printed circuit board.

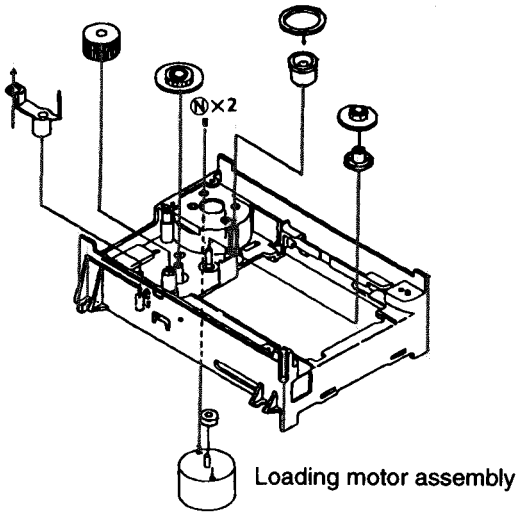
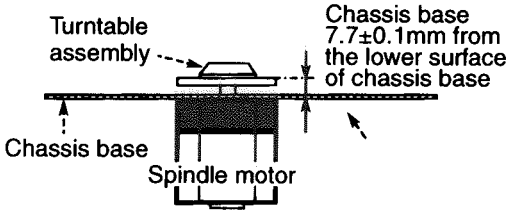


Fig. 12

■ Mounting the parts on the respective motors

(See Figs. 13 ~ 15)

1. Press in the turntable assembly to the spindle motor according to the dimensions in Fig. 13.
2. Press in the gear to the feed motor as indicated in Fig. 14.
3. Press in the pulley to the loading motor according to the dimensions in Fig. 15.



Press-in dimensions of turntable

Fig. 13

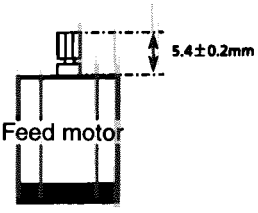


Fig. 14 Press-in dimensions of feed motor gear

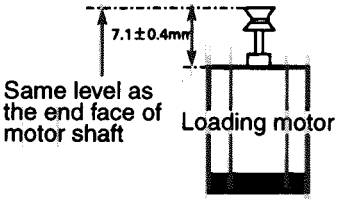
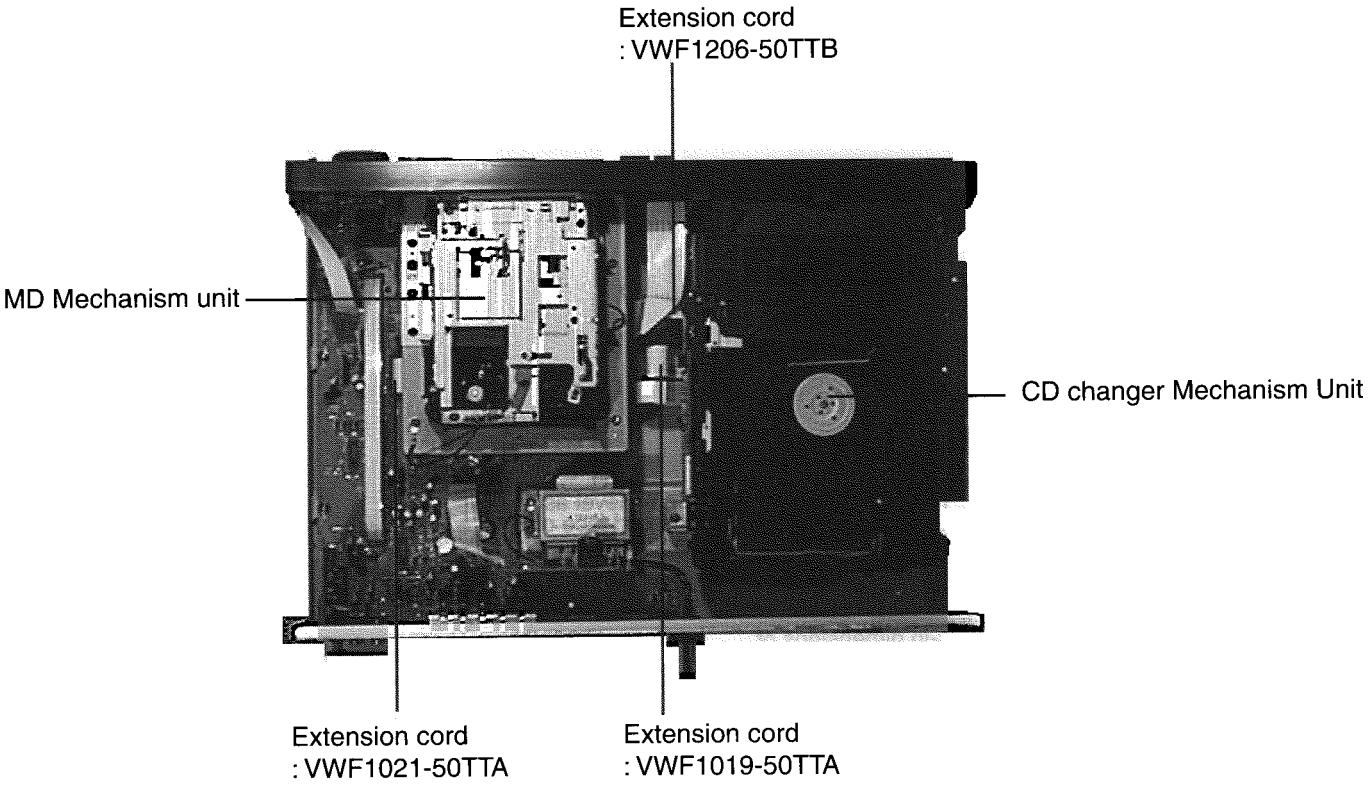


Fig. 15 Press-in dimensions of loading motor pulley

Connected an Extension Cord

1. Remove the CD changer mechanism unit.
2. Remove the MD mechanism unit.
3. Disconnect the card wires from the connectors CN811 and CN504 on the main board outgoing to CD changer mechanism unit.
4. Disconnect the card wire from the connector CN801 on the main board outgoing to MD mechanism unit.
5. The card wire which connects the connector "CN811" on a main substrate and CD changer mechanism unit is replaced with the extension code "VWF1019-50TTA".
6. The card wire which connects the connector "CN504" on a main substrate and the CD-TEXT substrate is replaced with the extension code "VWF1206-50TTB".
7. The card wire which connects the connector "CN801" on a main substrate and the MD mechanism unit is replaced with the extension code "VWF1021-50TTA".



Main Adjustment

■ Measurement Instruments Required for Adjustment

1. Digital oscillator
2. Attenuator impedance : 600Ω
   This oscillator should have a capacity to output 0dBs to 600Ω at an oscillation frequency of 50Hz-20kHz.
3. Electronic voltmeter
4. Leaser power meter (LEADER :LE8010J or Equality)
5. MD optical senser (LEADER : LP8001-02)
6. Standard signal generator
   : Model MSG-2580 or equivalent model.
   Generalized signal source.
7. Test disc
   CD : CTS-1000(12cm), CTS-1000T (CD-TEXT 12cm)
   GRG-1211(8cm)
   MD : Recordable disc (SONY : MDW-74/AU1 or JVC : MD-60)
   : pre-masterd disc (A-BEX : TMD-381)

■ Measurement Conditions

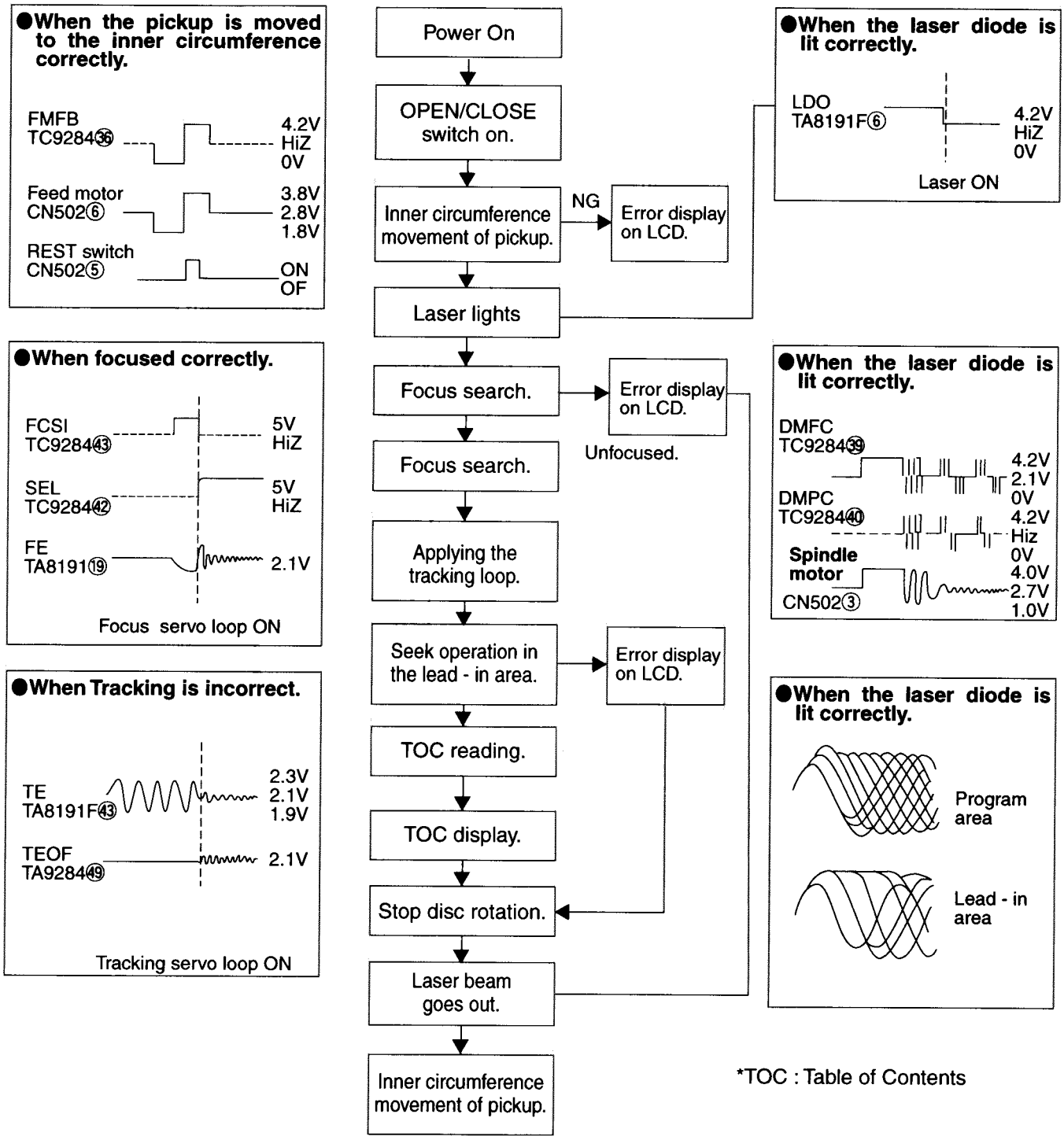
Power supply voltage
: AC110V/127V/230V(50/60Hz) ---UB/US/UT/U
: AC230V (50Hz) ---B/E/EE/EN
: AC120V (60Hz) ---J
Reference output
: LINE OUT ------- 2V (Full scale)
: Headphone ----- 0.33V/32 Ω (Full scale)
Reference frequency and LINE IN: 1kHz
Measurement output terminal : LINE OUT
MIC gain : 46±4dB
(MIX Blance :Center, Input signal :1kHz
Output load : 47kohm)

Items for Confirmation

Item	Description
About the confirmation of a practical operation	CD sections 1.Press the OPEN/CLOSE button of each trays and make sure that the disc smoothly draw out from three trays . 2.Set up the disc in the tray and press the OPEN/CLOSE button. Make sure that all of three trays draw smoothly in the main unit and make sure that the tray draw in the main unit, when the each trays press lightly. 3.Playback the first track of CTS-1000. next,make sure that it is able to playback within 5 seconds when it was searched the 28th track of CTS-1000, . 4.Make sure that it is able to play 8cm CD normally. 5.Playback the CTS-1000T. Make sure that it displaies "TEXT"on the displayed part of rotating disc and make sure that the charactor display part is display to the contents of "CD TEXT"normally. Make sure that the contents of display ia able to change by Operating DISPLAY/CHARA button. 6.Make sure that the title is able to input by normal disc normally. After in-put the title , take out the disc. And from 10 seconds or more pass, unplug the power cord from wall outlet and plug it. After turn on the main unit, set same disc another tray. At this time, make sure that the inputed disc title display normally. Note After it confirmes the action of unit, when it unpulg the power cord from wall outlet. Take out the disc and draw the tray in . Unplug the power cord from the wall outlet. make sure that it displays the "CD□ 00:00" (□:Tray number)on the FL display. MD Sections 1. Make sure that it slots in the mini disc smoothly and when it press the MD EJECT button, drawes out the mini disc smoothly. 2. Make go round the JOG DIAL right by one step when it is playing first track of mini disc. Make sure that second track is playback within 4 seconds. 3. Make sure that the input of title and EDIT is able to operate normally.

Item	Description
Specifications CD&MD sections Tracking ability :In play mode should not occured continuous noise by test disc. Play with deformed test disc : Player should work normally by test disc. Working of pich control : Normally by CTS-1000 (CD only). Signal to noise ratio : More than 90dB(CD), : More than 86dB(MD) Recording and playback distorition : Less than 0.04% Digital input : -24dBm~-15dBm Normally motor noise TOC reading time by recordable : Less than 10 seconds Total horrmonic distosion : Less than 0.01% Output voltage : 2.0±0.3V COMPULINK function : The control by CONPULINK should be operated normally.	About a Common Operating Confirmation 1. Turn on the main unit. Make sure that the allophone do not hear from speaker. 2. Make sure that the FL display is is displayed normally. How to confirm while press the SET button of main unit at stand-by, press the POWER button. Make sure that if it indicates all on the FL display ,it becomes CHECK MODE. Under such a condition, if press the power button again, becomes stand-by. How to cancelof CHECK MODE if it presses the POWER button, while it presses the SET button, CHECK MODE is canceled. About the state to send off the commodity 1.Return to the rest position of PICKUP UNIT. How to check the CD section 1-1 Take out the disc and if check all itemes later, draw in the trays. Turn off the main unit from make sure that the trays are able to draw out and in. 1-2 Or read in TOC again 1-3 After 3 seconds or more pass ,press the STOP button and turn off the main unit from taking out disc. 2. Return the position of CD1 from after take out the disc ,draw the each of trays in. Next, press the CD1 button and press the STOP button. Make sure that it indicates "CD1 00:00"on the FL display. 3. Set the"REC LEVEL" volume by minimum position and set the MIX BALANCE volumes by center position . 4. Match the model within VOLTAGE SELECTOR to AC230V. After confirming whether to be set as follows, each mode setting turns off the main unit. 1. Make sure that the LED turn on by the switching of mode of MD or CD. 2. Set the normal position both PLAY mode of MD and CD. 3. Setting TIMER is off position 1-1 How to cancel the setting DAILY TIMER Press the CANCEL button from to set the DAILY TIMER mode. 1-2 How to cancel the setting ONCE TIMER Press the CANCEL button from to set the ONCE TIME mode. 4. Setting CD pitch contro! volume is off position. 5. Switching of CONPULINK mode is MD position. 6. Switching of TEXT CONPULINK mode is "SAVE" position. 7. About how to cancel the memory of MIX PROGRAM etc. Press the POWER button while it presses CANCEL button by to turn on the main unit. Next if it indicates MEMORY CLEAR on the FL display, plug the power cord from wall outlet. **Caution** **About 3 and 7 items, if it is set ,preset program of custmer all erases .**

General Description of TOC Reading (CD Part)



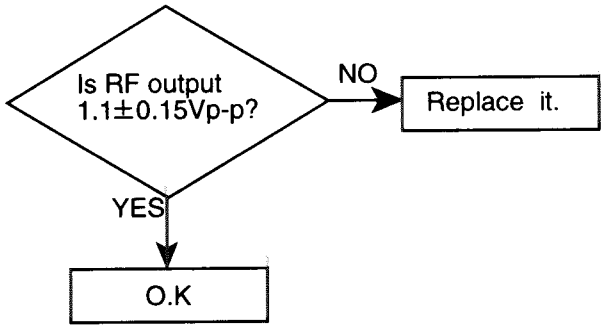
*TOC : Table of Contents

CD Section

Maintenance of Laser Pickup

(1) Cleaning the pick up lens
Befor you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

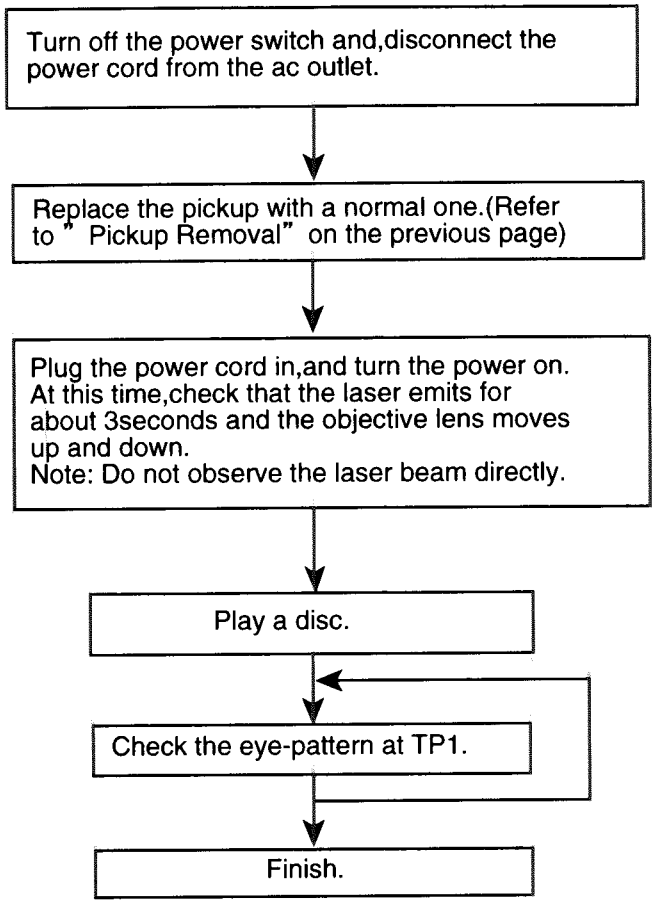
(2) Life of the laser diode (Fig.1)
When the life of the laser diode has expired, the following symptoms wil appear.
(1) The level of RF output (EFM output:amplitude of eye pattern) will below.



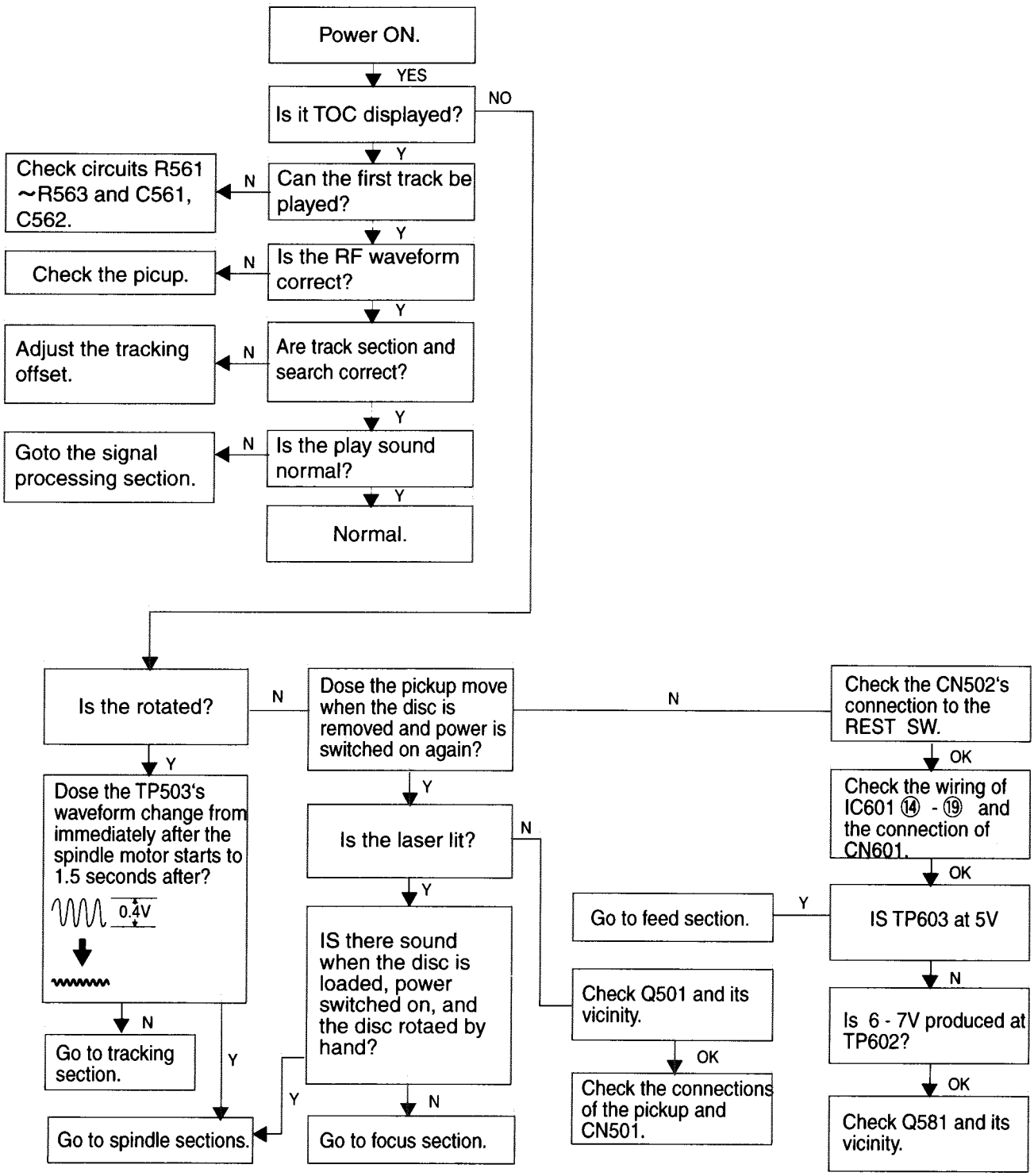
(Fig.1)

(3) Semi-fixed resistor on the APC PC board
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.
If the semi-fixed resistor is adjusted while the pickup is functioning normally,the laser pickup may be damaged due to excessive current.

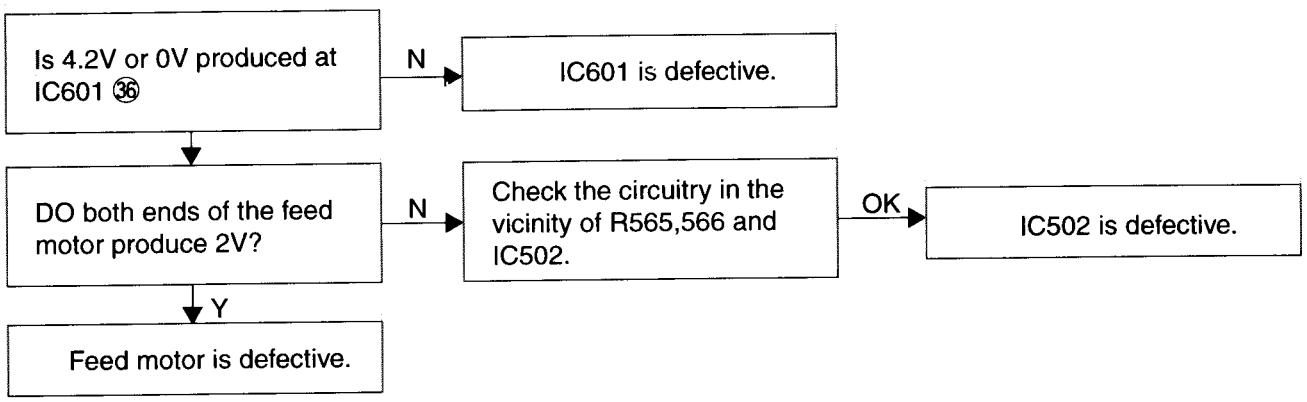
Replacement of Laser Pickup


Turn off the power switch and,disconnect the power cord from the ac outlet.
Replace the pickup with a normal one.(Refer to " Pickup Removal" on the previous page)
Plug the power cord in,and turn the power on. At this time,check that the laser emits for about 3seconds and the objective lens moves up and down.
Note: Do not observe the laser beam directly.
Play a disc.
Check the eye-pattern at TP1.
Finish.

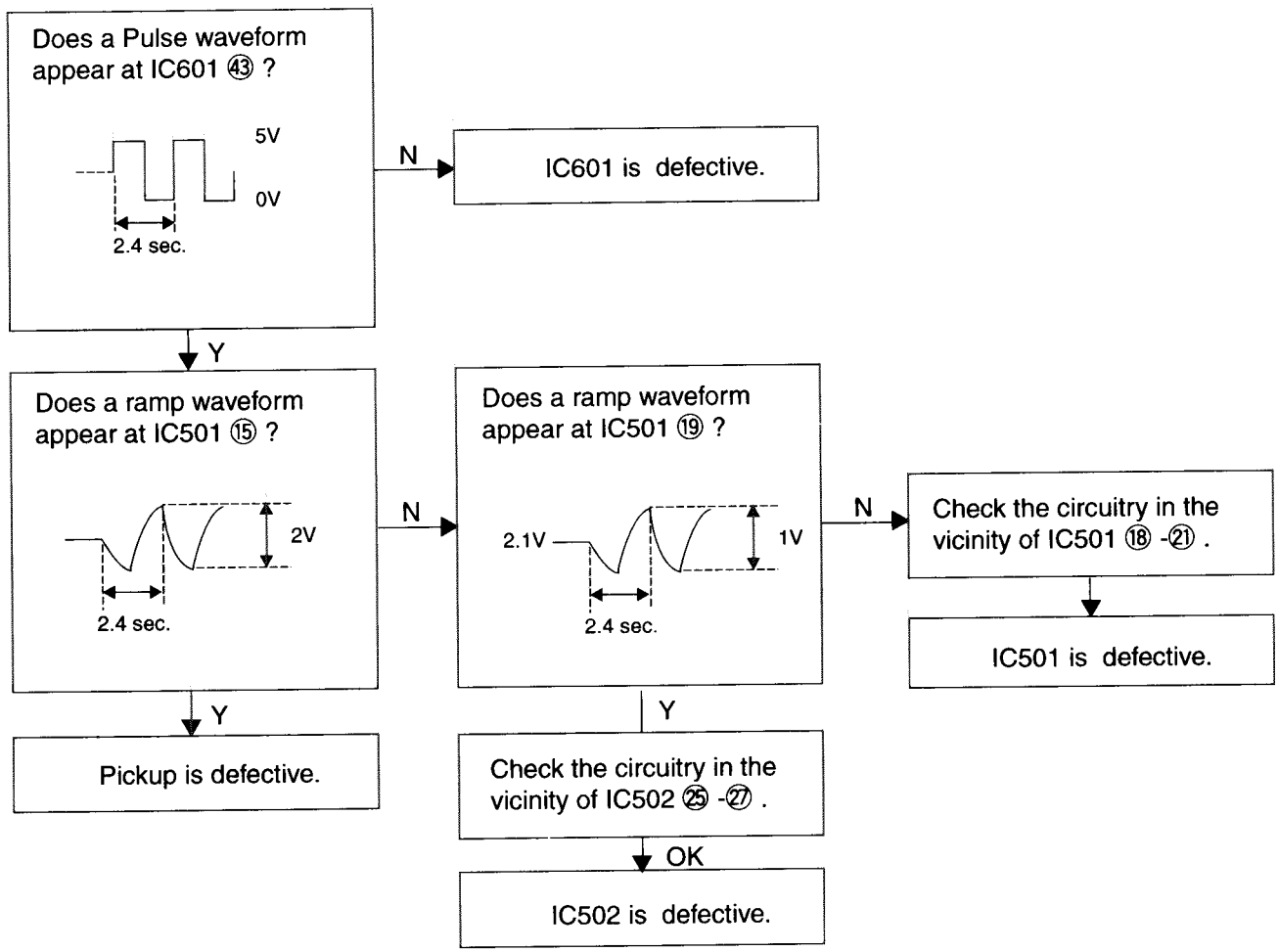
■ General Section



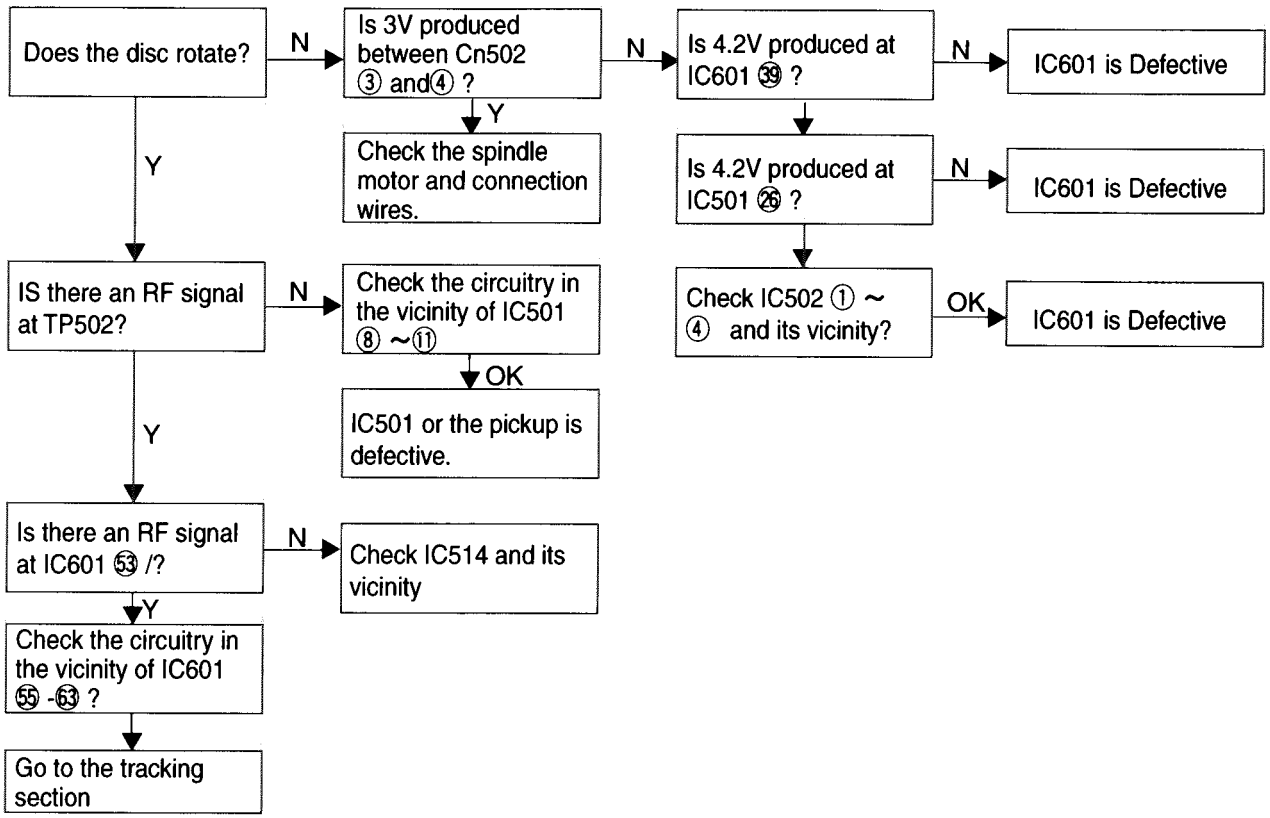
■ Feed Section


Is 4.2V or 0V produced at IC601 ㊱
N
IC601 is defective.
DO both ends of the feed motor produce 2V?
N
Check the circuitry in the vicinity of R565,566 and IC502.
OK
IC502 is defective.
Y
Feed motor is defective.

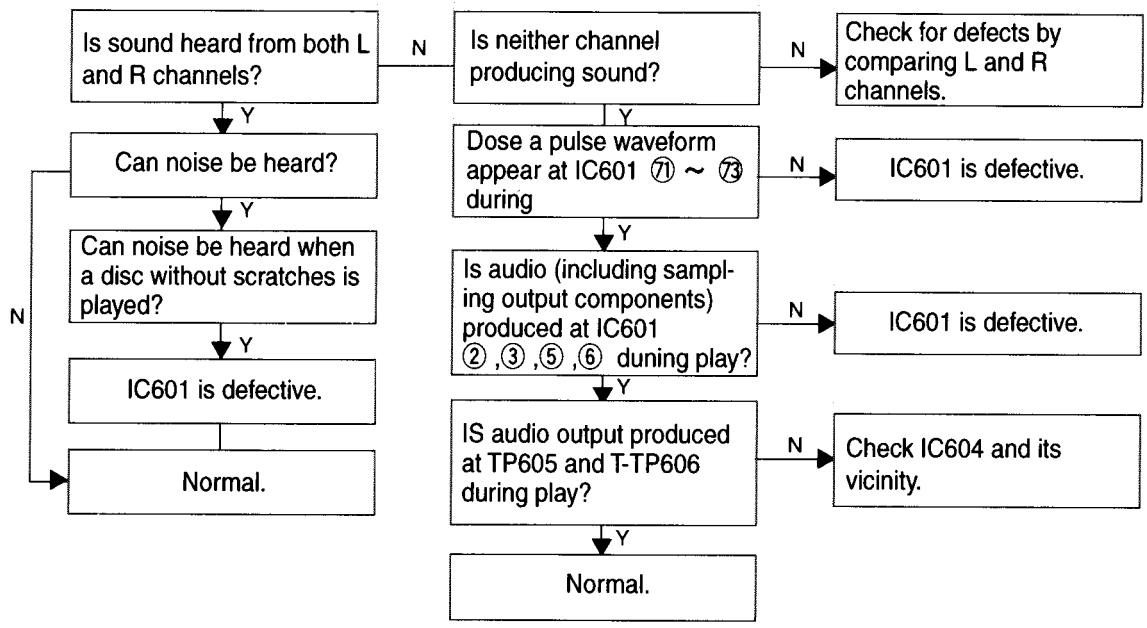
■ Focus Section



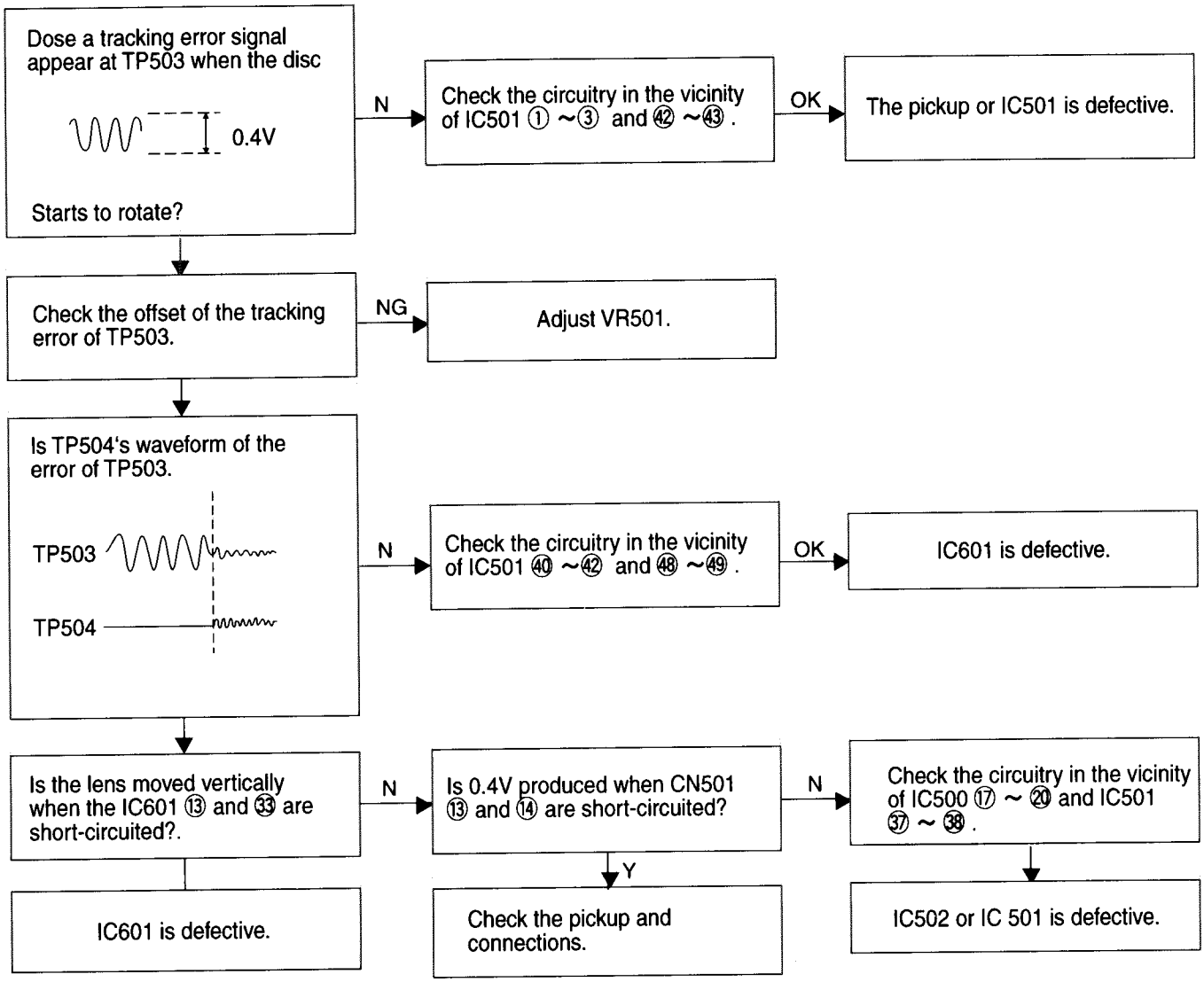
■ Spindle Motor Section


Does the disc rotate?
N
Is 3V produced between Cn502 ③ and④ ?
N
Is 4.2V produced at IC601 ㊴ ?
N
IC601 is Defective
Y
Check the spindle motor and connection wires.
Is 4.2V produced at IC501 ㉖ ?
N
IC601 is Defective
IS there an RF signal at TP502?
N
Check the circuitry in the vicinity of IC501 ⑧ ~⑪
Check IC502 ① ~ ④ and its vicinity?
OK
IC601 is Defective
OK
IC501 or the pickup is defective.
Y
Is there an RF signal at IC601 ㊸ /?
N
Check IC514 and its vicinity
Y
Check the circuitry in the vicinity of IC601 ㊺ -㊸ ?
Go to the tracking section

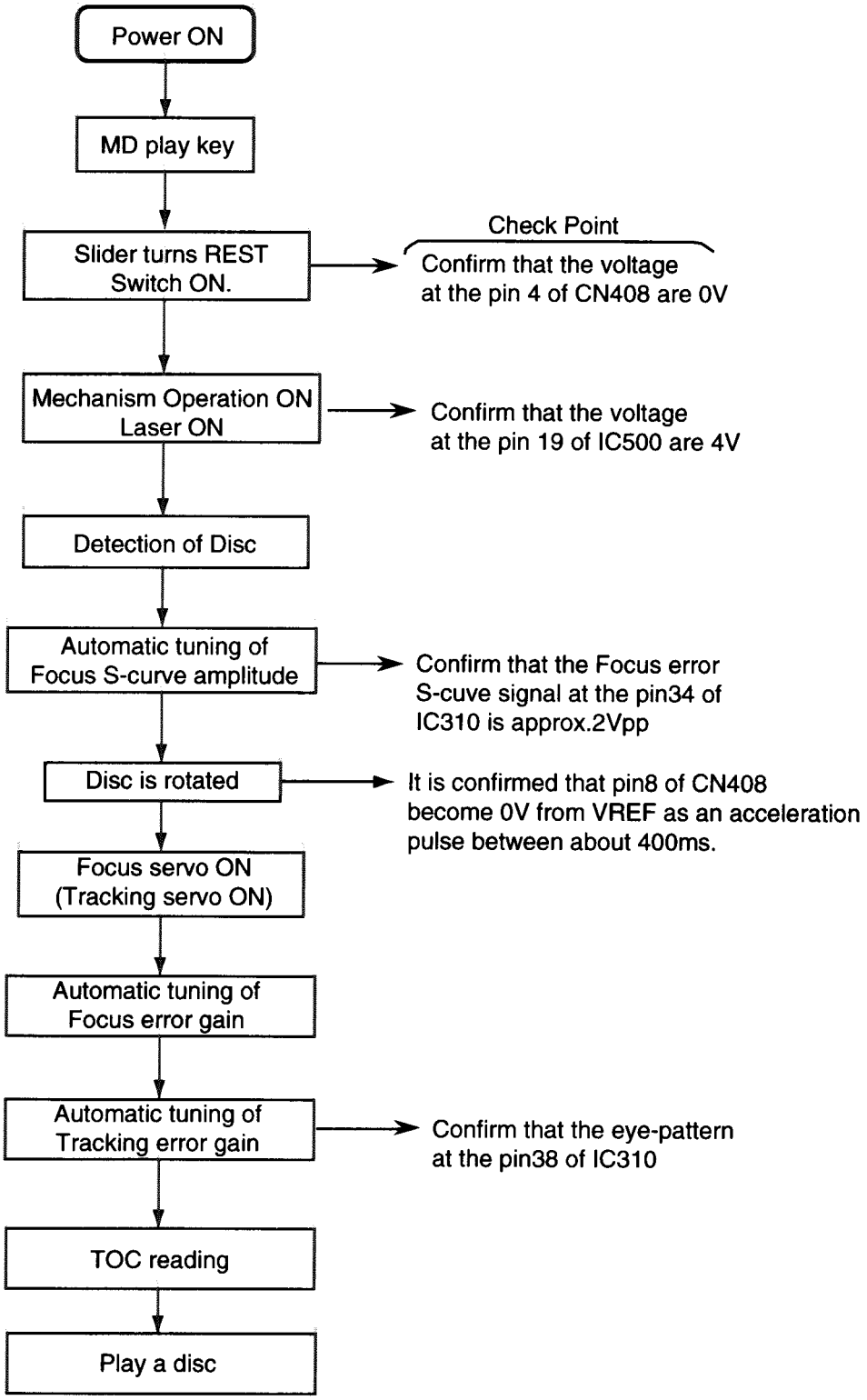
■ Signal Processing Section



■ Tracking Section


Dose a tracking error signal appear at TP503 when the disc
0.4V
Starts to rotate?
N
Check the circuitry in the vicinity of IC501 ① ~③ and ㊷ ~㊸ .
OK
The pickup or IC501 is defective.
Check the offset of the tracking error of TP503.
NG
Adjust VR501.
Is TP504's waveform of the error of TP503.
TP503
TP504
N
Check the circuitry in the vicinity of IC501 ㊵ ~㊷ and ㊽ ~㊾ .
OK
IC601 is defective.
Is the lens moved vertically when the IC601 ⑬ and ㉝ are short-circuited?.
N
Is 0.4V produced when CN501 ⑬ and ⑭ are short-circuited?
N
Check the circuitry in the vicinity of IC500 ⑰ ~ ⑳ and IC501 ㊲ ~ ㊳ .
IC601 is defective.
Y
Check the pickup and connections.
IC502 or IC 501 is defective.

Flow of Functional Operation Unitl TOC Read (MD Part)


Power ON
MD play key
Slider turns REST Switch ON.
Check Point
Confirm that the voltage at the pin 4 of CN408 are 0V
Mechanism Operation ON Laser ON
Confirm that the voltage at the pin 19 of IC500 are 4V
Detection of Disc
Automatic tuning of Focus S-curve amplitude
Confirm that the Focus error S-cuve signal at the pin34 of IC310 is approx.2Vpp
Disc is rotated
It is confirmed that pin8 of CN408 become 0V from VREF as an acceleration pulse between about 400ms.
Focus servo ON (Tracking servo ON)
Automatic tuning of Focus error gain
Automatic tuning of Tracking error gain
Confirm that the eye-pattern at the pin38 of IC310
TOC reading
Play a disc

MD Section

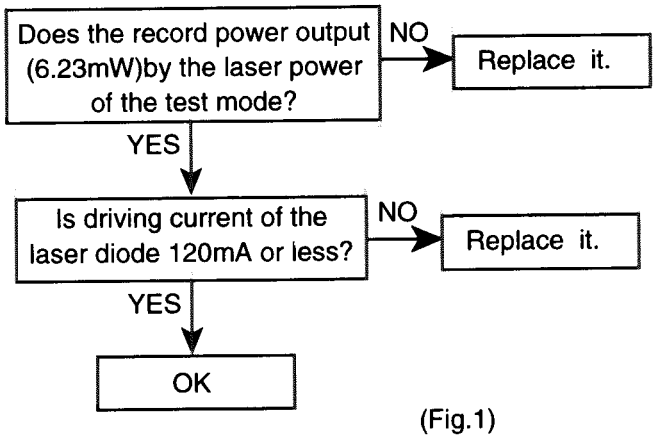
Maintenance of Laser Pickup

(1) Cleaning the pick up lens
Befor you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.

(2) Life of the laser diode (Fig.1)
When the life of the laser diode has expired, the following symptoms wil appear.

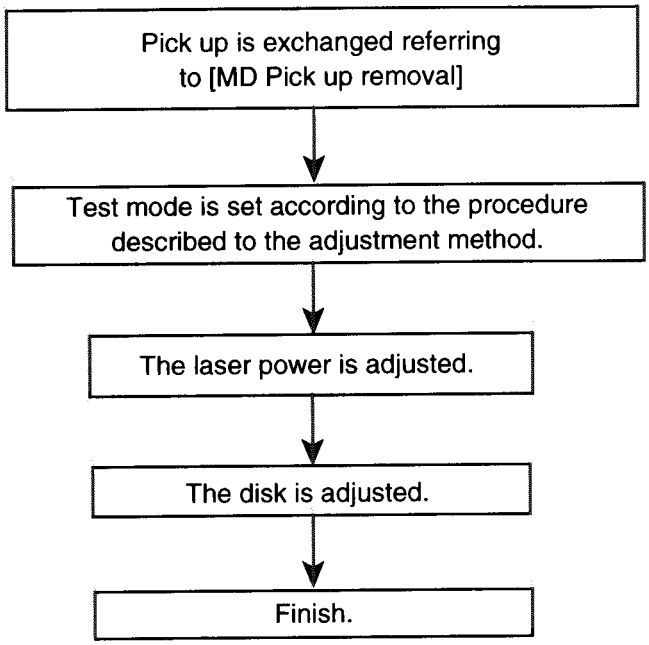
1. The level of RF output (EFM output:amplitude of eye pattern) will below.
2. It is not possible to record.
3. Driving current necessary to issue the laser diode increases.

Please confirm longevity according to the following flow chart.



(Fig.1)

Replacement of Laser Pickup


Pick up is exchanged referring to [MD Pick up removal]
Test mode is set according to the procedure described to the adjustment method.
The laser power is adjusted.
The disk is adjusted.
Finish.

Attention

Compare with previous CD players, over 10times laser beam is radiated from this model because of the magnetic recording.
Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.
The wound and note taintless on the disk used because the adjustment is automatically done by the disk confirmation after the laser power is adjusted, and a set value is written by all the recorded one.

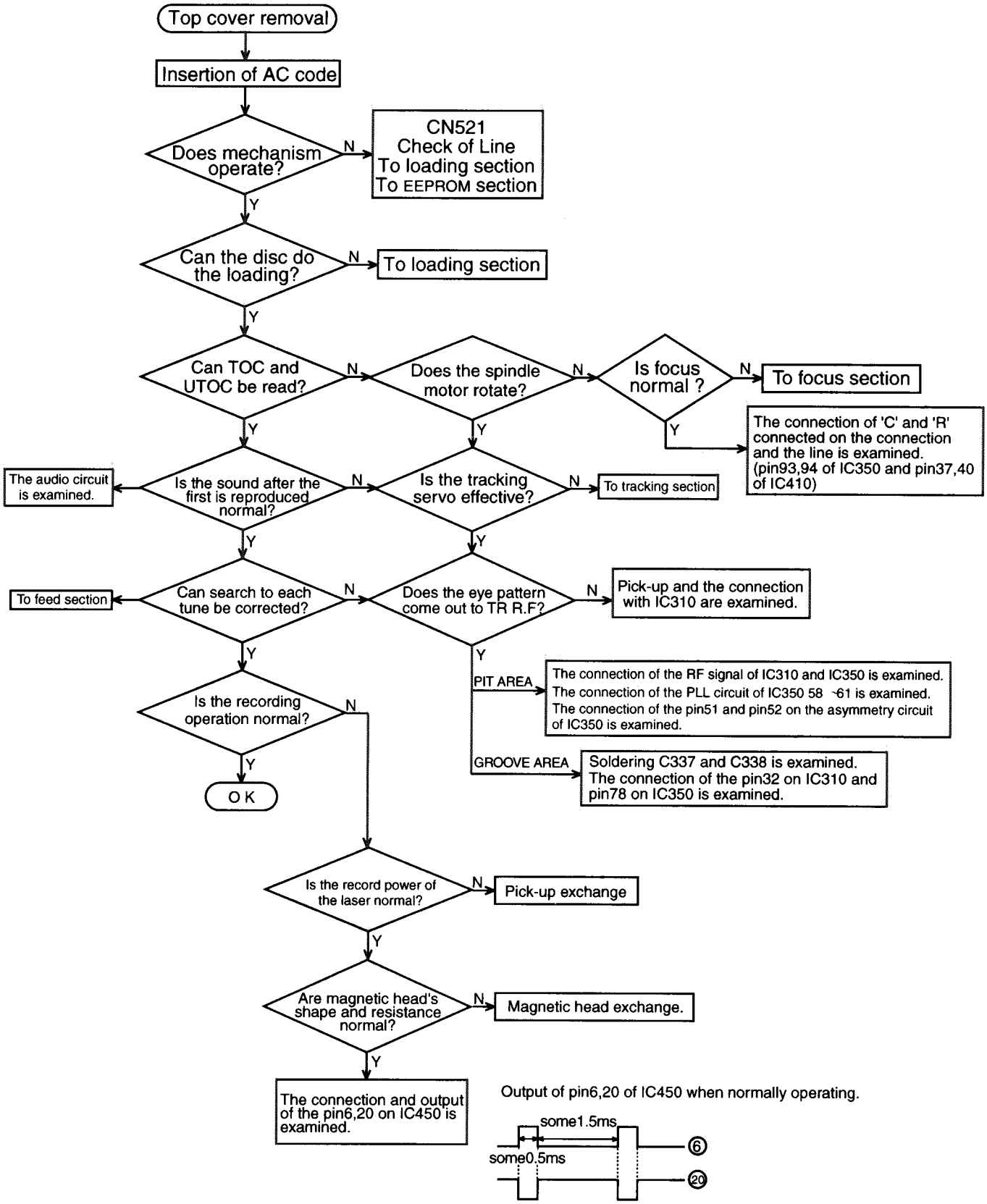
(3)Method of measuring driving current of laser diode

The voltage of R337 of the MD servo control substrate is measured, and it is judged that the longevity of the laser diode disappeared for 120mV or more.

(4) Semi-fixed resistor on the APC (Auto power control)P.C. board

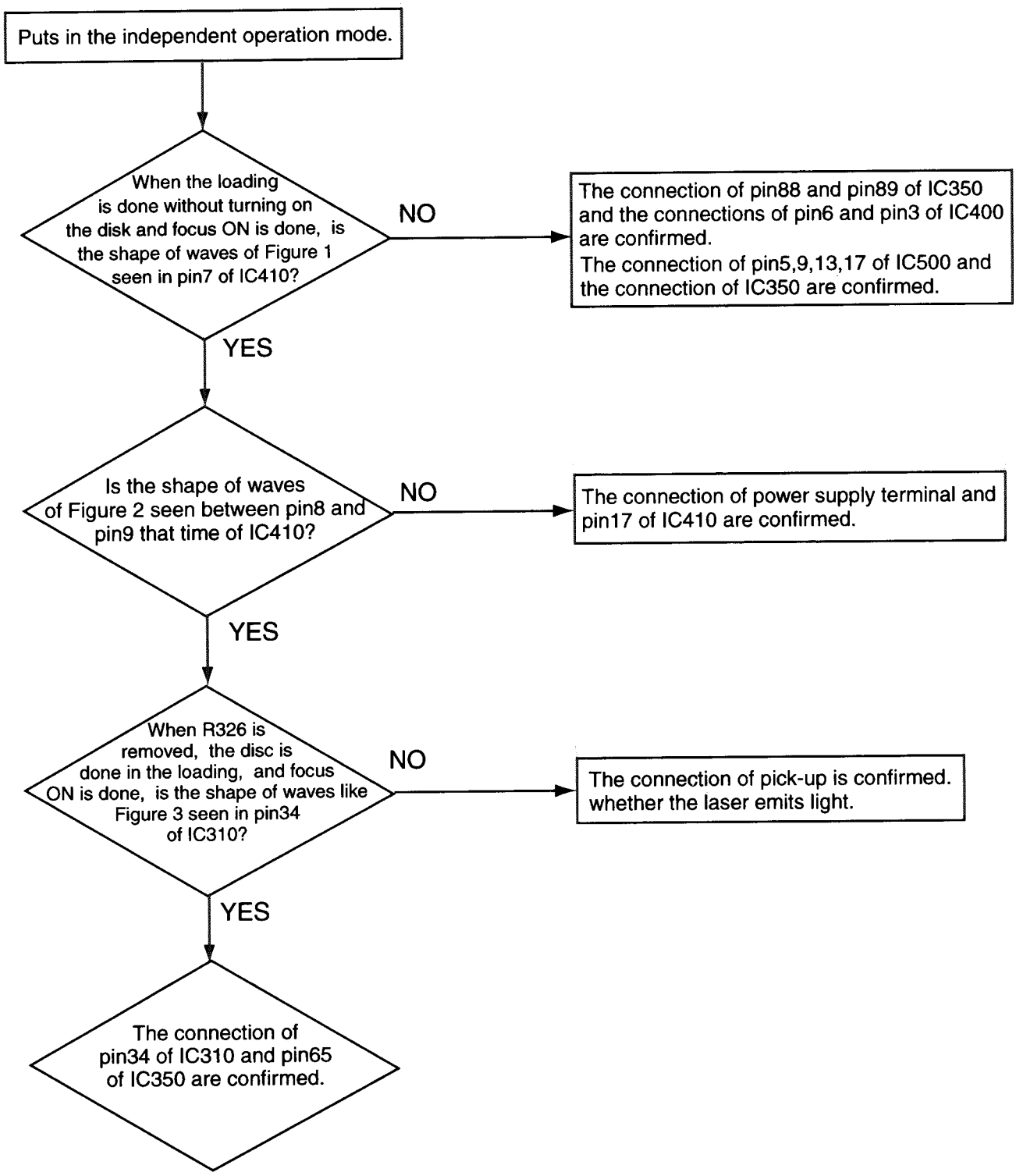
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power.Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.
If the laser power is lower than the specified value,the laser diode is almost worn out, and the laser pickup should be replaced.If the semi-fixed resistor is adjusted while the pickup is functioning normally,the laser pickup may be damaged due to excessive current.

Guidance of MD repair

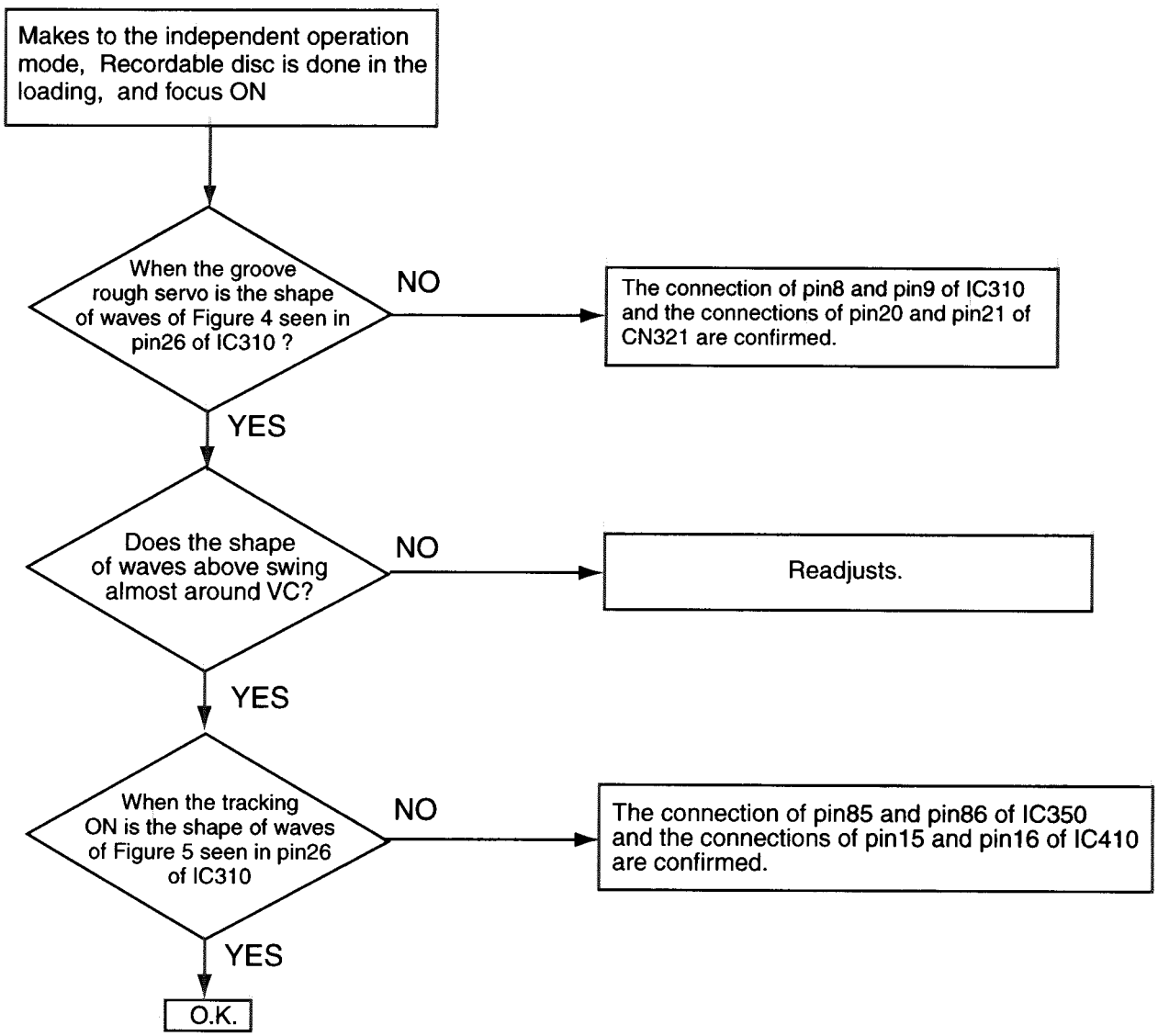

Top cover removal
Insertion of AC code
Does mechanism operate?
N
CN521
Check of Line
To loading section
To EEPROM section
Y
Can the disc do the loading?
N
To loading section
Y
Can TOC and UTOC be read?
N
Does the spindle motor rotate?
N
Is focus normal ?
N
To focus section
Y
Y
The connection of 'C' and 'R' connected on the connection and the line is examined. (pin93,94 of IC350 and pin37,40 of IC410)
The audio circuit is examined.
Is the sound after the first is reproduced normal?
N
Is the tracking servo effective?
N
To tracking section
Y
Y
To feed section
Can search to each tune be corrected?
N
Does the eye pattern come out to TR R.F?
N
Pick-up and the connection with IC310 are examined.
Y
Y
PIT AREA
The connection of the RF signal of IC310 and IC350 is examined.
The connection of the PLL circuit of IC350 58 ~61 is examined.
The connection of the pin51 and pin52 on the asymmetry circuit of IC350 is examined.
Is the recording operation normal?
N
Y
GROOVE AREA
Soldering C337 and C338 is examined.
The connection of the pin32 on IC310 and pin78 on IC350 is examined.
O K
Is the record power of the laser normal?
N
Pick-up exchange
Y
Are magnetic head's shape and resistance normal?
N
Magnetic head exchange.
Y
The connection and output of the pin6,20 on IC450 is examined.
Output of pin6,20 of IC450 when normally operating.
some1.5ms
some0.5ms
⑥
⑳

Focus section

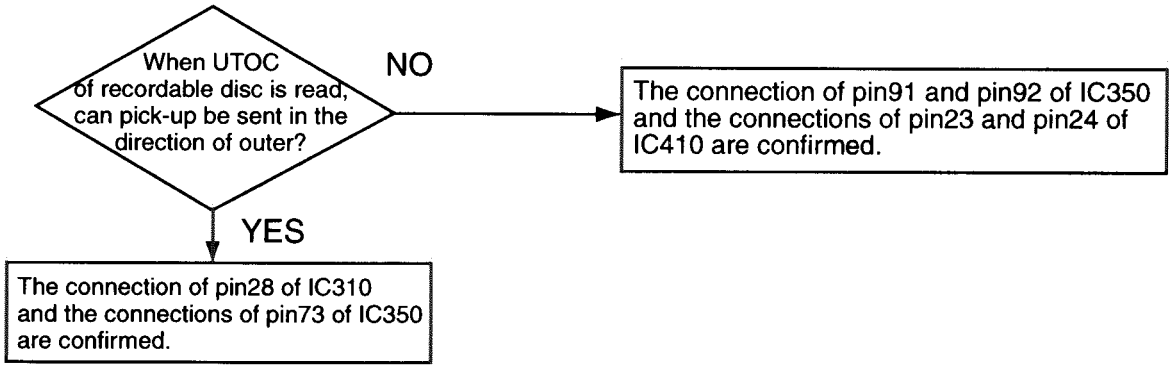
The loading operation can be done without the disc when either of pin3 ~5 of CN410 is connected with the ground.


Puts in the independent operation mode.
When the loading is done without turning on the disk and focus ON is done, is the shape of waves of Figure 1 seen in pin7 of IC410?
NO
The connection of pin88 and pin89 of IC350 and the connections of pin6 and pin3 of IC400 are confirmed.
The connection of pin5,9,13,17 of IC500 and the connection of IC350 are confirmed.
YES
Is the shape of waves of Figure 2 seen between pin8 and pin9 that time of IC410?
NO
The connection of power supply terminal and pin17 of IC410 are confirmed.
YES
When R326 is removed, the disc is done in the loading, and focus ON is done, is the shape of waves like Figure 3 seen in pin34 of IC310?
NO
The connection of pick-up is confirmed. whether the laser emits light.
YES
The connection of pin34 of IC310 and pin65 of IC350 are confirmed.

■ Tracking section


Makes to the independent operation mode, Recordable disc is done in the loading, and focus ON
When the groove rough servo is the shape of waves of Figure 4 seen in pin26 of IC310 ?
NO
The connection of pin8 and pin9 of IC310 and the connections of pin20 and pin21 of CN321 are confirmed.
YES
Does the shape of waves above swing almost around VC?
NO
Readjusts.
YES
When the tracking ON is the shape of waves of Figure 5 seen in pin26 of IC310
NO
The connection of pin85 and pin86 of IC350 and the connections of pin15 and pin16 of IC410 are confirmed.
YES
O.K.

■ Feed section

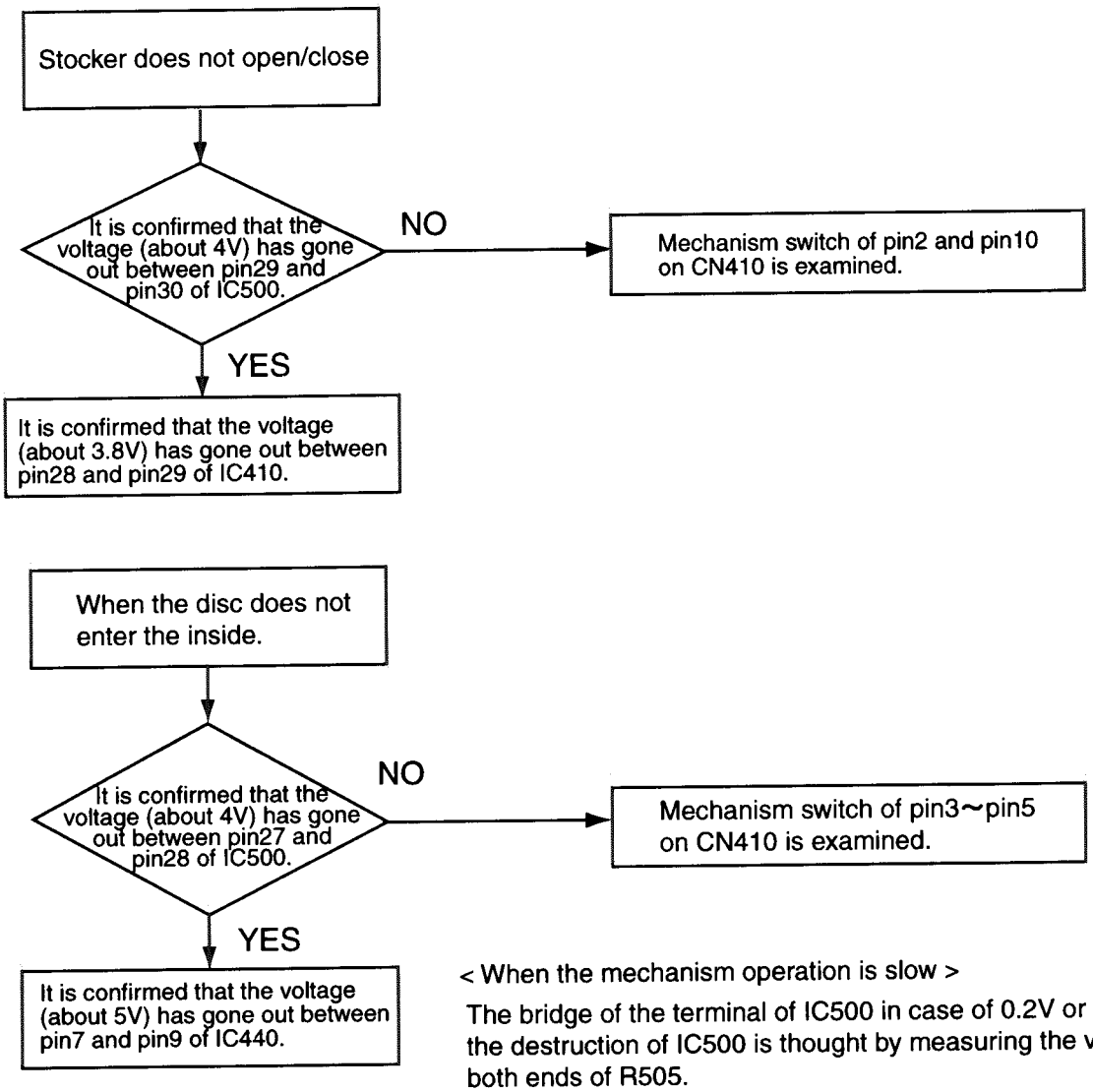

When UTOC of recordable disc is read, can pick-up be sent in the direction of outer?
NO
The connection of pin91 and pin92 of IC350 and the connections of pin23 and pin24 of IC410 are confirmed.
YES
The connection of pin28 of IC310 and the connections of pin73 of IC350 are confirmed.

■EEPROM Section

The MD microcomputer accesses EEPROM(IC590) after reset is released, and reads the data of all addresses.
Header is a different or the adjustment data is impossible value at this, and the microcomputer connects the communication with EEPROM and The mechanism operation in the initial etc. is not done at all.
In this case, because the signal enters the state of the discharge in the communication line with EEPROM, the initialization of EEPROM is needed.
When EEPROM is exchanged for the new article and data is broken, pin18 `21 of CN521 are connected with the ground and power supply (AC) of the set is turned on.
When it can do the thing that the mechanism does the initialization operation is completion of EEPROM.
Pin18 `pin21 of CN521 are liberated, and afterwards, input and adjust power supply (AC) of the set again.
When this phenomenon continues even if EEPROM initializes,electric destruction is thought.

■Loading section

Confirmation of connecting and soldering of CN403,CN410,CN418.
Confirmation of power supply terminal of motor driver (CN410).


Stocker does not open/close
It is confirmed that the voltage (about 4V) has gone out between pin29 and pin30 of IC500.
NO
Mechanism switch of pin2 and pin10 on CN410 is examined.
YES
It is confirmed that the voltage (about 3.8V) has gone out between pin28 and pin29 of IC410.
When the disc does not enter the inside.
It is confirmed that the voltage (about 4V) has gone out between pin27 and pin28 of IC500.
NO
Mechanism switch of pin3~pin5 on CN410 is examined.
YES
It is confirmed that the voltage (about 5V) has gone out between pin7 and pin9 of IC440.

< When the mechanism operation is slow >

The bridge of the terminal of IC500 in case of 0.2V or more or the destruction of IC500 is thought by measuring the voltage at both ends of R505.

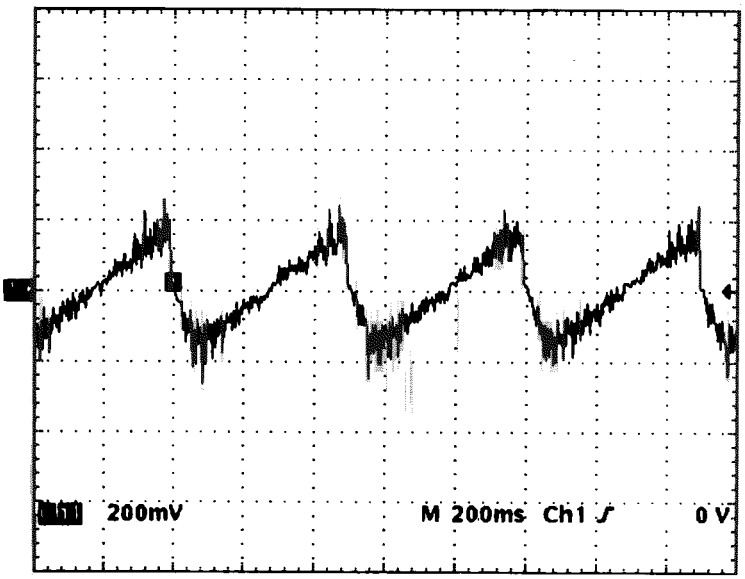


Fig.1

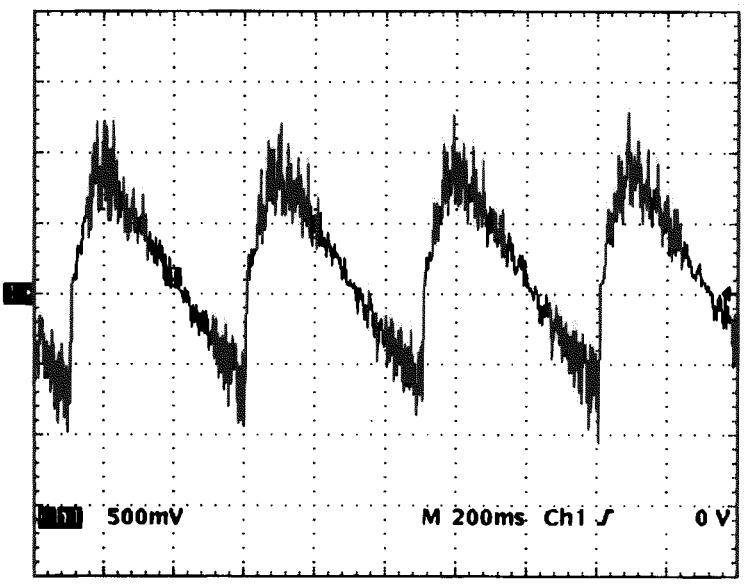


Fig.2

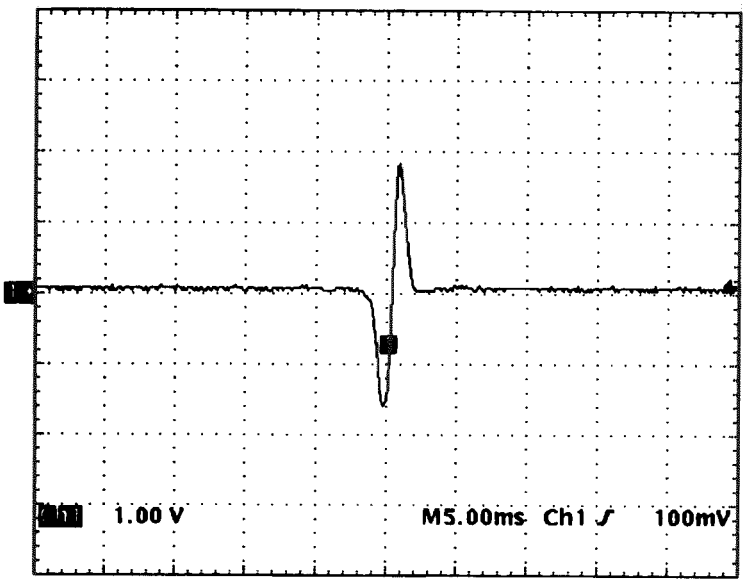


Fig.3

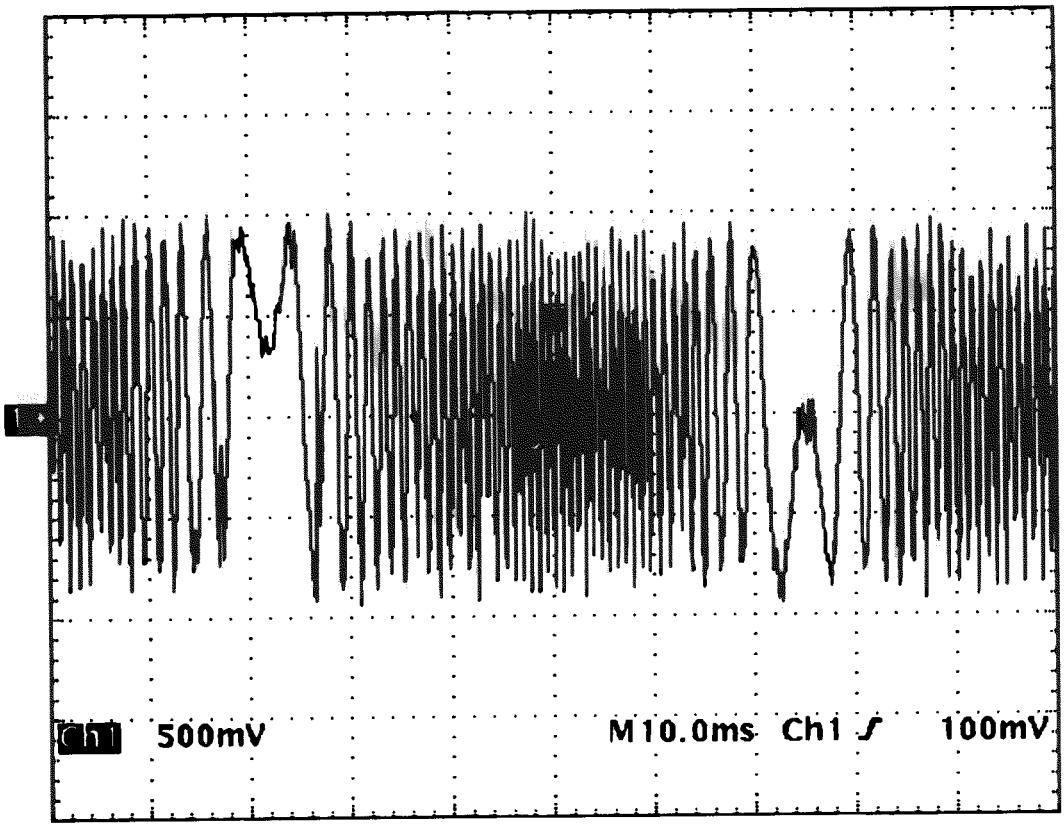


Fig.4

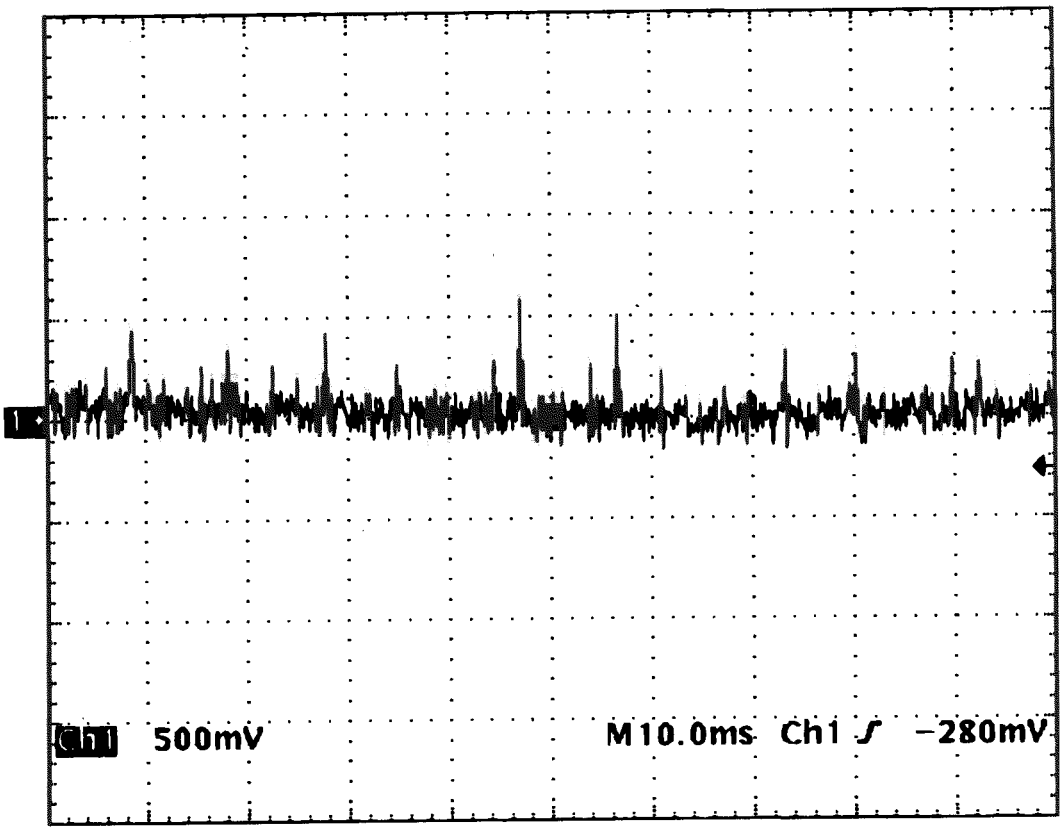
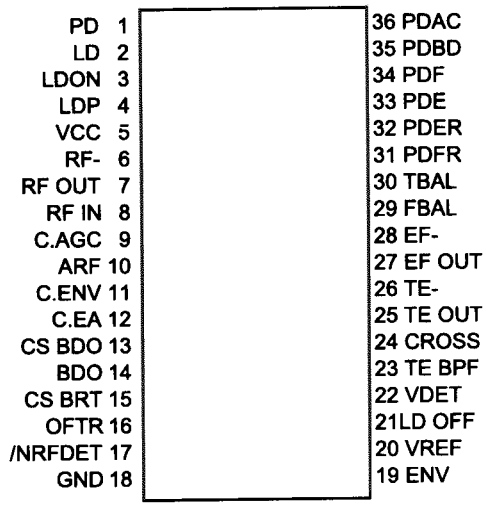


Fig.5

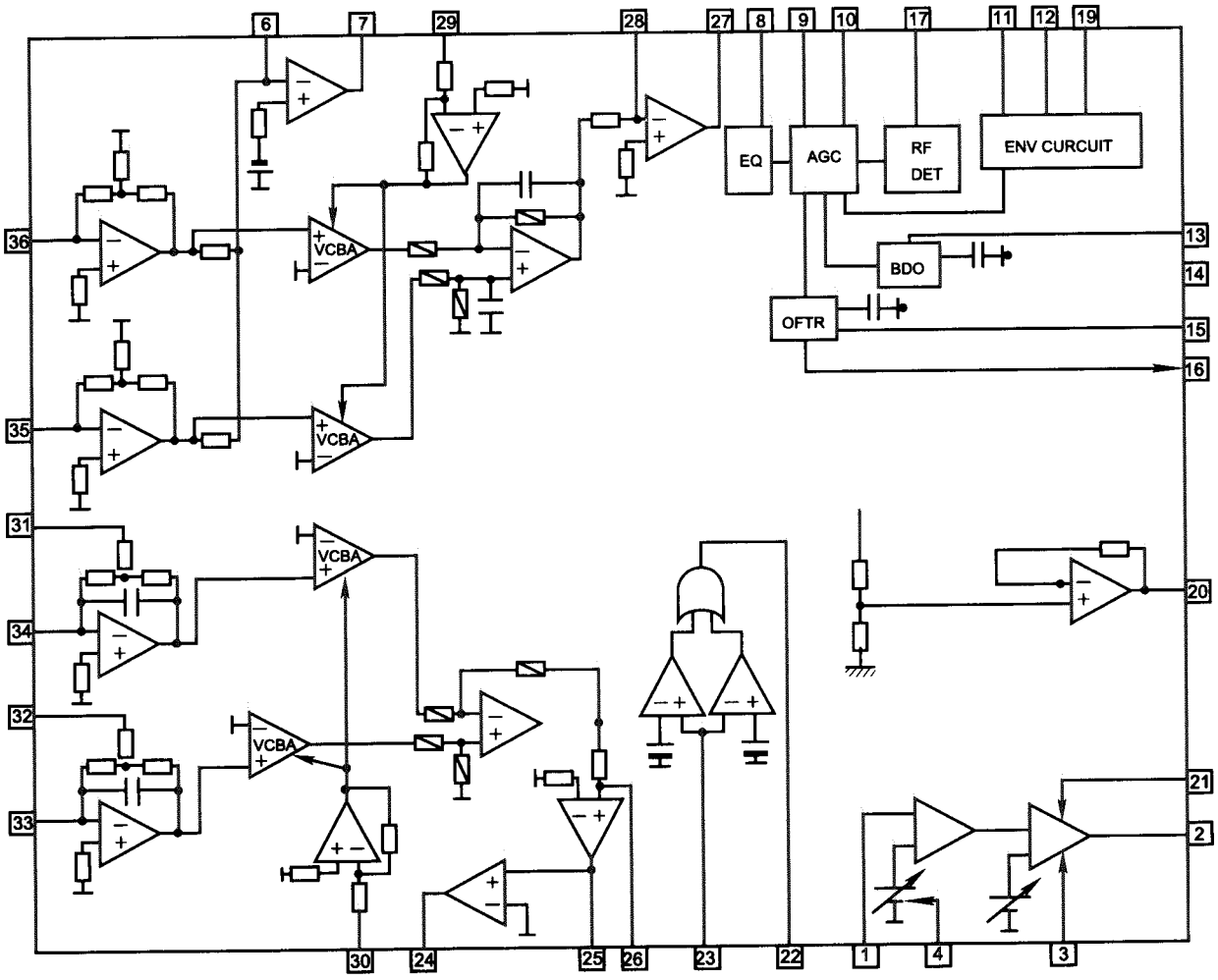
Description of Main ICs

■ AN8806SB(IC601):RF & Servo amp

1.Terminal Layout



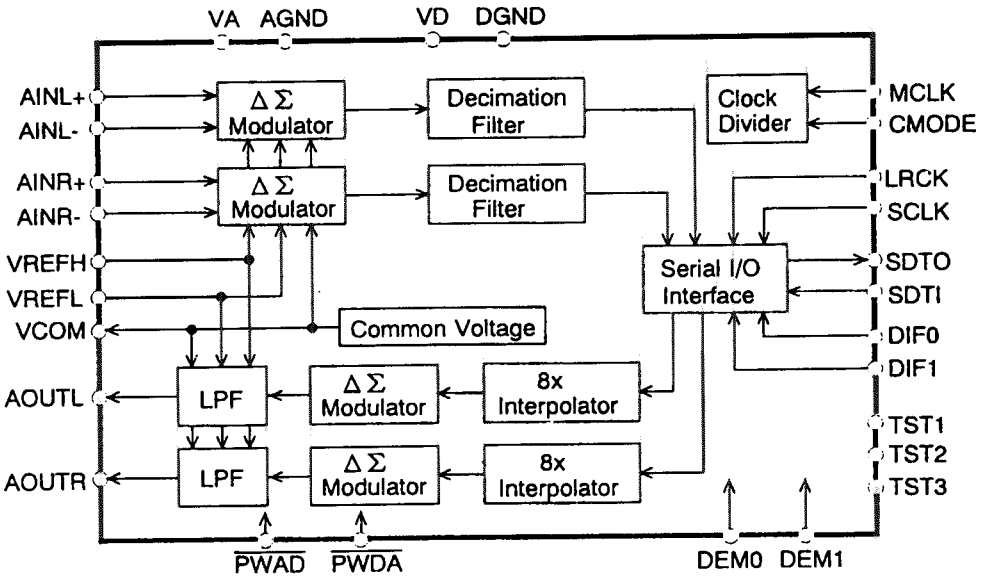
2.Block



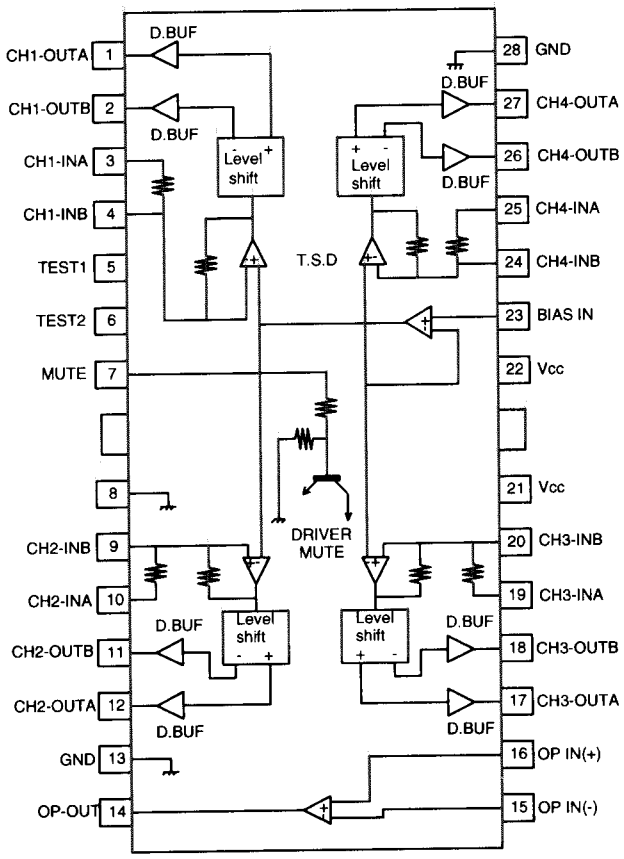
3. Functions

Pin No.	Symbol	I/O	Functions and operations
1	PD	I	APC amp input terminal
2	LD	O	APC amp output terminal
3	LD ON	I	APC ON/OFF control terminal
4	LDP	--	Connect to ground
5	VCC	--	Power supply
6	RF-	I	Inverse input pin for RF amp
7	RF OUT	O	RFamp output
8	RF IN	I	RF input
9	C.AGC	I/O	Connecting pin of AGC loop filter
10	ARF	O	RF output
11	C.ENV	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
12	C.EA	I/O	A capacitor is connected to this terminal to detect the envelope of RF signal
13	CS BDO	I/O	A capacitor is connected to detect the lower envelope of RF signal
14	BDO	O	BDO output pin
15	CS BRT	I/O	A capacitor is connected to detect the lower envelope of RF signal
16	OFTR	O	Of-track status signal output
17	/NRFDET	O	RF detection signal output
18	GND	--	Ground
19	ENV	O	Envelope output
20	VREF	O	Reference voltage output
21	LD OFF	--	Connect to ground
22	VDET	O	Vibration detection signal output
23	TE BPF	I	Input pin of tracking error through BPF
24	CROSS	O	Tracking error cross output
25	TE OUT	O	Tracking error signal output
26	TE-	I	Inverse input pin for tracking error amp
27	FE OUT	O	Output pin of focus error
28	FE-	I	Inverse input pin for focus error amp
29	FBAL	I	Focus balance control
30	TBAL	I	Tracking balance control
31	PDFR	I/O	F I-V amp gain control
32	PDER	I/O	E I-V amp gain control
33	PDF	I	I-V amp input
34	PDE	I	I-V amp input
35	PD BD	I	I-V amp input
36	PD AC	I	I-V amp input

■AK4520A-VF-X(IC480):A/D&D/A Converter

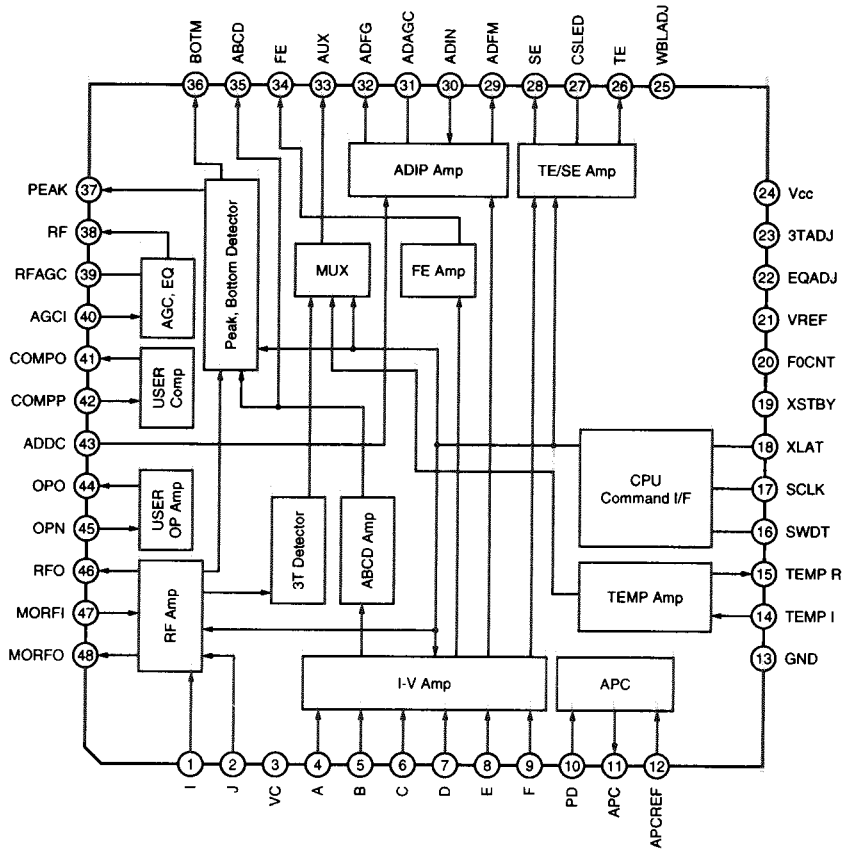


■ BA6897FP(IC801) 4channel driver



■ CXA2523AR(IC310):MD Servo

1.Block Diagram

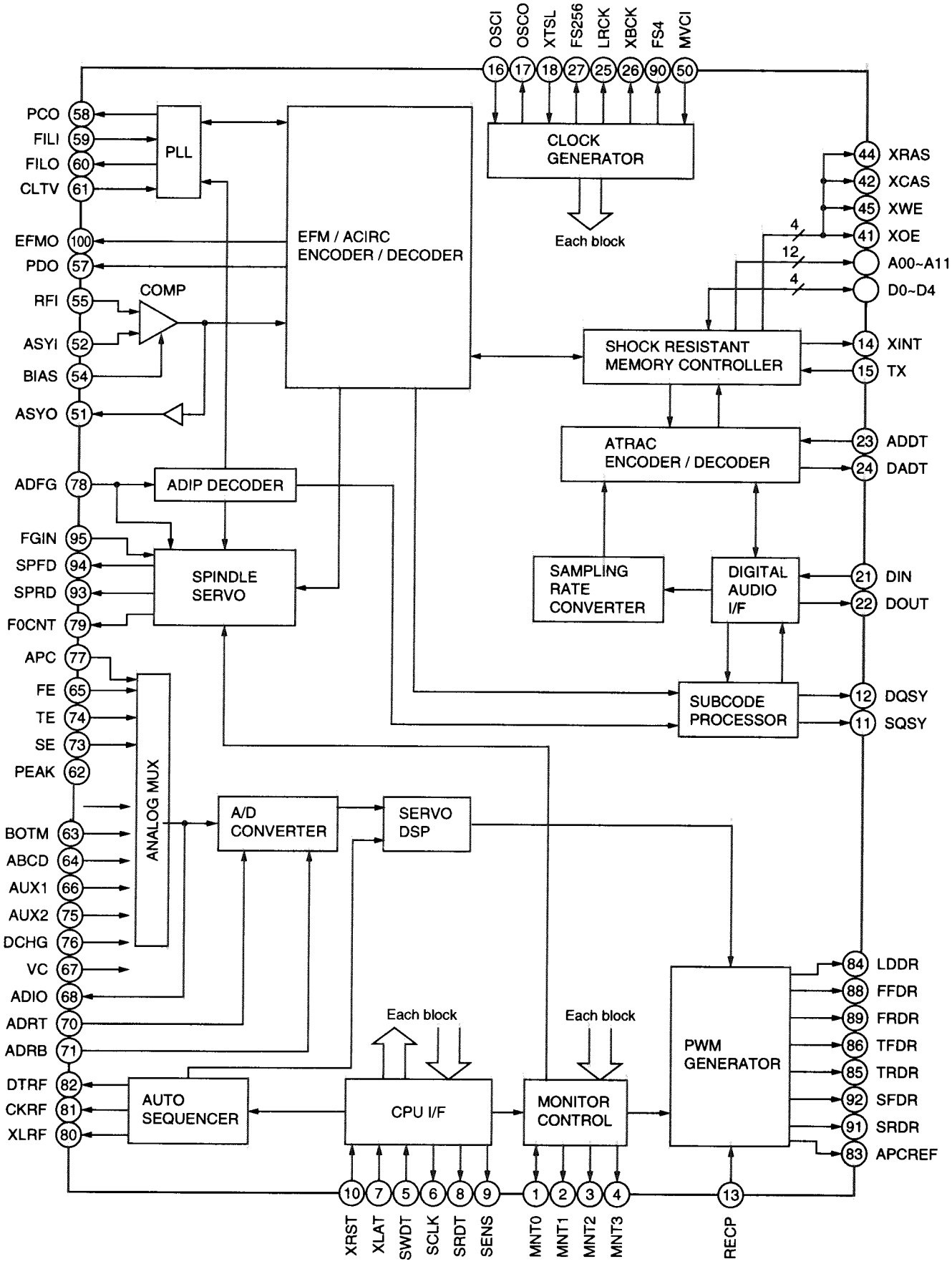


2.Pin Function

Pin No.	Symbol	I/O	Function
1	I	I	I-V converted RF signal I input.
2	J	I	I-V converted RF signal J input.
3	VC	O	Vcc/2 voltage output.
4	A	I	A current input for main beam servo signal.
5	B	I	B current input for main beam servo signal.
6	C	I	C current input for main beam servo signal.
7	D	I	D current input for main beam servo signal.
8	E	I	E current input for side beam servo signal.
9	F	I	F current input for side beam servo signal.
10	PD	I	Reflection light quantity monitor signal input.
11	APC	O	Laser APC output.
12	APCREF	I	Reference voltage input for the laser power intensity setting.
13	GND	-	Connect to GND.
14	TEMPI	I	Connects the temperature sensor.
15	TEMP R	I	Connects the temperature sensor. outputs the reference voltage.
16	SWDT	I	Data input for microcomputer serial interface.
17	SCLK	I	Shift clock input for microcomputer serial interface.
18	XLAT	I	Latch signal input for microcomputer serial interface.Latched when low.
19	XSTBY	I	Standby setting pin. Normal operation when high Standby when low.
20	FOCNT	I	Internal current source setting pin.

Pin No.	Symbol	I/O	Function
21	VREF	O	Reference voltage output.
22	EQADJ	I/O	Equalizer center frequency setting pin.
23	3TADJ	I/O	BPF3T center frequency setting pin.
24	Vcc	-	Power supply.
25	WBLADJ	I/O	BPF22 center frequency setting pin.
26	TE	O	Tracking error signal output.
27	CSLED	-	Connects the sled error signal LPF capacitor.
28	SE	O	Sled error signal output.
29	ADFM	O	ADIP FM signal output.
30	ADIN	I	ADIP signal comparator input.
31	ADAGC	-	Connects the ADIPAGC capacitor.
32	ADFG	O	ADIP2 binary value signal output.
33	AUX	O	13 output / temperature signal output. Switched with serial commands.
34	FE	O	Focus error signal output.
35	ABCD	O	Reflection light quantity signal output for the main beam servo detector.
36	BOTM	O	RF/ABCD bottom hold signal output.
37	PEAK	O	Peak hold signal output for the RF/ABCD signals.
38	RF	O	RF equalizer output.
39	RFAGC	-	Connects the RFAGC capacitor.
40	AGCI	I	RFAGC input.
41	COMPO	O	User comparator output.
42	COMPP	I	User comparator non-inverted input.
43	ADDC	I/O	Connects the capacitor for ADIP amplifier feedback circuit.
44	OPO	O	User operational amplifier output.
45	OPN	I	User operational amplifier inverted input.
46	RFO	O	RF amplifier output. Eye pattern checkpoint.
47	MORFI	I	Input of the groove RF signal with AC coupling.
48	MORFO	O	Groove RF signal output.

■ IC350 : CXD2652AR(DSSP & DSP) Block Diagram



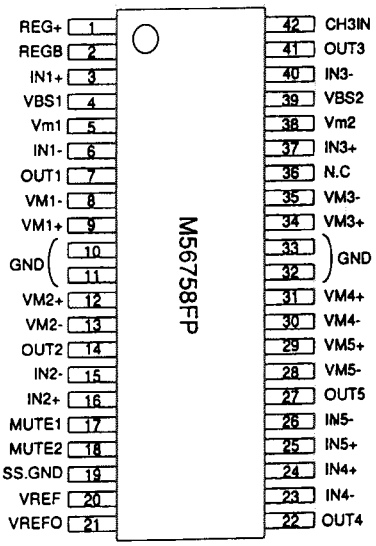
2.Pin Function

Pin No.	Symbol	I/O	Function
1	MNT0	I/O	Monitor output.
2	MNT1	O	Monitor output.
3	MNT2	O	Monitor output.
4	MNT3	O	Monitor output.
5	SWDT	I	Data input for microcomputer serial interface.
6	SCLK	I	Shift clock input for microcomputer serial interface
7	XLAT	I	Latch input for microcomputer serial interface.Latched at the falling edge.
8	SRDT	O	Data output for microcomputer serial interface.
9	SENS	O	Output the internal status corresponding to the microcomputer serial interface address.
10	XRST	I	Reset input. Low:reset
11	SQSY	O	Disc sub code Q sync/ADIP sync output.
12	DQSY	O	Sub code Q sync output in U-bit CD or MD format when the Digital in source is CD or MD
13	RECP	I	Laser power switching input. High:recording power Low:playback power.
14	XINT	O	Interruption request output. Low:when the interruption status occurs.
15	TX	I	Enable signal input for recording data output. High:enabled.
16	OSCI	I	Crystal oscillation circuit input.
17	OSCO	O	Crystal oscillation circuit output. (inverted output of the OSCI pin)
18	XTSL	I	OSCI input frequency switching. High:512Fs(22.5792MHz) Low:1024Fs(45.1584MHz)
19	DVDD	-	Digital power supply.
20	DVss	-	Digital ground.
21	DIN	I	Digital audio interface signal input.
22	DOUT	O	Digital audio interface signal output.
23	ADDT	I	Analog recording input (Connect to the external A/D converter output).
24	DADT	O	REC monitor output/decoded audio data output.
25	LRCK	O	LRCK(44.1kHz) output to the external audio block.
26	XBCK	O	Bit clock(2.8224MHz) output to the external audio block.
27	FS256	O	256Fs output.(11.2896MHz)
28	DVdd	-	Digital power supply.
29	A03	O	External DRAM address output.
30	A02	O	External DRAM address output.
31	A01	O	External DRAM address output.
32	A00	O	External DRAM address output.
33	NC	-	Non connect.
34	A04	O	External DRAM address output.
35	A05	O	External DRAM address output.
36	A06	O	External DRAM address output.
37	A07	O	External DRAM address output.
38	A08	O	External DRAM address output.
39		-	Non connect.
40	DVss	-	Digital ground.
41	XOE	O	External DRAM output enable.
42	XCAS	O	External DRAM $\overline{CAS}$ output.
43	A09	O	External DRAM address output.
44	XRAS	O	External DRAM $\overline{RAS}$ output.
45	XWE	O	External DRAM write enable.
46	D1	I/O	External DRAM data bus.
47	D0	I/O	External DRAM data bus.
48	D2	I/O	External DRAM data bus.
49	D3	I/O	External DRAM data bus.
50	MVCI	I	External VCO (784Fs) clock input.

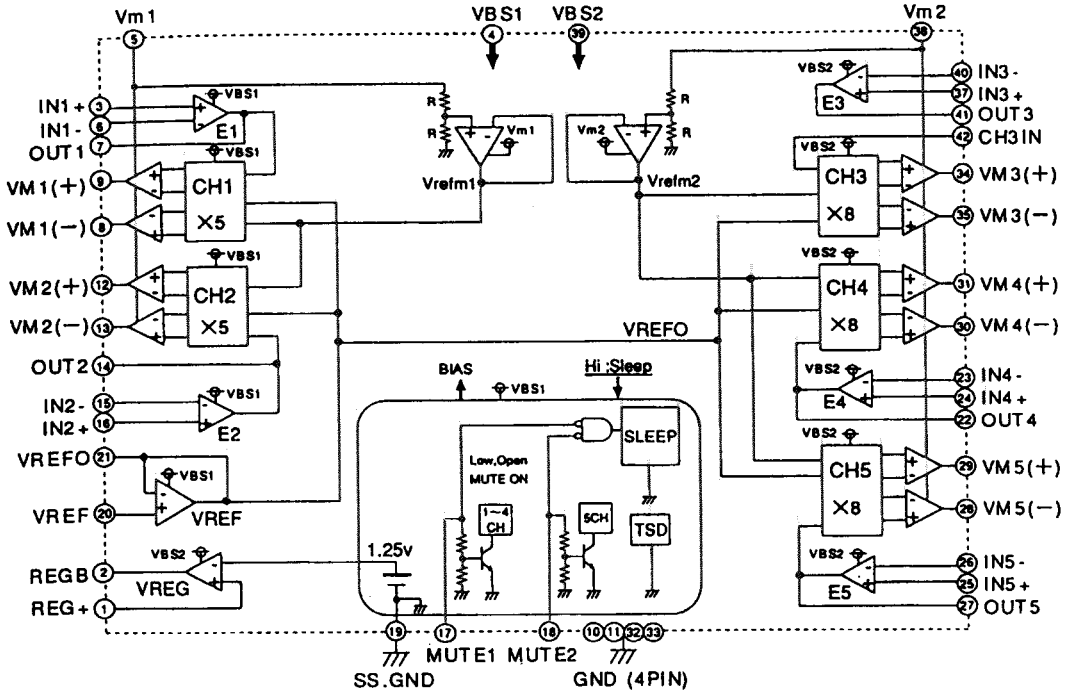
Pin No.	Symbol	I/O	Function
51	ASYO	O	Playback EFM full-swing output. (Low:Vss High:Vdd)
52	ASYI	I	Playback EFM comparator slice voltage input.
53	AVdd	-	Analog power supply.
54	BIAS	I	Playback EFM comparator bias current input.
55	RFI	I	Playback EFM RF signal input.
56	AVss	-	Analog ground.
57	PDO	O	Phase comparison output for analog PLL of EFM decoder.
58	PCO	O	Phase comparison output for master PLL of playback digital PLL and recoding EFM PLL.
59	FILI	I	Filter input for master PLL of playback digital PLL and recording EFM PLL.
60	FILO	O	Filter output for master PLL of playback digital PLL and recording EFM PLL.
61	CLTV	I	Internal VCO control voltage input for master PLL of playback digital PLL and recording EFM PLL.
62	PEAK	I	Peak hold signal input for quantity of light.
63	BOTM	I	Bottom hold signal input for quantity of light.
64	ABCD	I	Signal input for quantity of light.
65	FE	I	Focus error signal input.
66	AUX1	I	Auxiliary input1.
67	VC	I	Center voltage input.
68	ADIO	O	Monitor output for A/D converter input signal.
69	AVdd	-	Analog power supply.
70	ADRT	I	Voltage input for the upper limit of the A/D converter operating range.
71	ADRB	I	Voltage input for the lower limit of the A/D converter operating range.
72	AVss	-	Analog ground.
73	SE	I	Sled error signal input.
74	TE	I	Tracking error signal input.
75	AUX2	I	Auxiliary input 2.
76	DCHG	I	Connect to the low-impedance power supply.
77	TEST4	I	Error signal input for laser digital APC.
78	ADFG	I	ADIP binary FM signal (22.05±1kHz) input.
79	F0CNT	O	CXA2523 current source setting output.
80	XLRF	O	CXA2523 control latch output. Latched at the falling edge.
81	CKRF	O	CXA2523 control shift clock output.
82	DTRF	O	CXA2523 control data output.
83	APCREF	O	Reference PWM output for laser APC.
84	TEST0	-	Non connect
85	TRDR	O	Tracking servo drive PWM output.(-)
86	TFDR	O	Tracking servo drive PWM output.(+)
87	DVdd	-	Digital power supply.
88	FFDR	O	Focus servo drive PWM output.(+)
89	FRDR	O	Focus servo drive PWM output.(-)
90	FS4	-	Non connect.
91	SRDR	O	Sled servo drive PWM output.(-)
92	SFDR	O	Sled servo drive PWM output.(+)
93	SPRD	O	Spindle servo drive output.(PWM(-) or polarity)
94	SPFD	O	Spindle servo drive output.(PWM(+) or PWM absolute value)
95	FGIN	I	Spindle CAV servo FG input.
96	TEST1	I	Test pin.Connect to GND.
97	TEST2	I	Test pin.Connect to GND.
98	TEST3	I	Test pin.Connect to GND.
99	DVss	-	Digital ground.
100	EFMO	O	Low when playback:EFM (encoded data) output when recording.

■M56758FP-X(IC410):5 Channel Actuator Driver

1.Terminal Layout

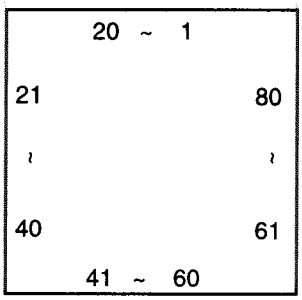


2.Block

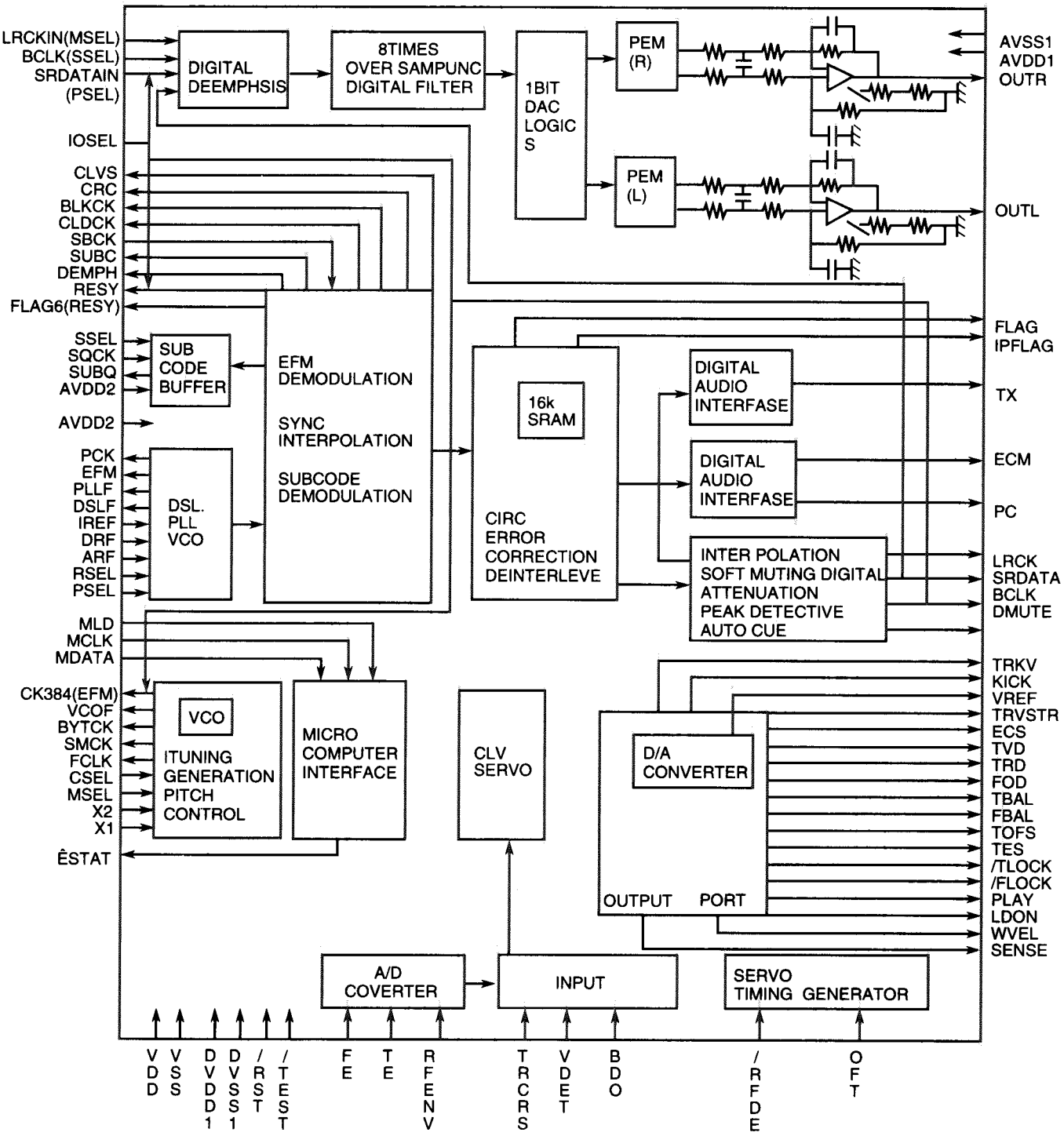


■ MN35510(IC651):DIGITAL SERVO&DIGITAL SIGNAL PROCESSER

1. Terminal Layout



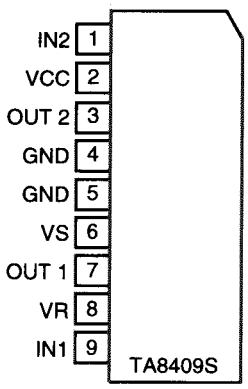
2.Block Diagram



3. Description

Pin No.	symbol	I/O	Description	Pin No.	symbol	I/O	Description
1	BCLK	O	Not used	41	TES	O	Tracking error shunt signal output(H:shunt)
2	LRCK	O	Not used	42	PLAY	–	Not used
3	SRDATA	O	Not used	43	WVEL	–	Not used
4	DVDD1	–	Power supply (Digital)	44	ARF	I	RF signal input
5	DVSS1	–	Connected to GND	45	IREF	I	Reference current input pin
6	TX	O	Digital audio interface output	46	DRF	I	Bias pin for DSL
7	MCLK	I	μcom command clock signal input (Data is latched at signal's rising point)	47	DSLF	I/O	Loop filter pin for DSL
8	MDATA	I	μcom command data input	48	PLLF	I/O	Loop filter pin for PLL
9	MLD	I	μcom command load signal input	49	VCOF	–	Not used
10	SENSE	O	Sence signal output	50	AVDD2	–	Power supply(Analog)
11	FLOCK	O	Focus lock signal output Active :Low	51	AVSS2	–	Connected to GND(Analog)
12	TLOCK	O	Tracking lock signal output Active :Low	52	EFM	–	Not used
13	BLKCK	O	sub-code·block·clock signal output	53	PCK	–	Not used
14	SQCK	I	Outside clock for sub-code Q resister input	54	PDO	–	Not used
15	SUBQ	O	Sub-code Q -code output	55	SUBC	–	Not used
16	DMUTE	–	Connected to GND	56	SBCK	–	Not used
17	STATUS	O	Status signal (CRC,CUE,CLVS,TTSTOP,ECLV,SQOK)	57	VSS	–	Connected to GND(for X'tal cscillation circuit)
18	RST	I	Reset signal input (L:Reset)	58	XI	I	Input of 16.9344MHz X'tal oscillation circuit
19	SMCK	–	Not used	59	X2	O	Output of X'tal oscillation circuit
20	PMCK	–	Not used	60	VDD	–	Power supply(for X'tal cscillationcircuit)
21	TRV	O	Traverse enforced output	61	BYTCK	–	Not used
22	TVD	O	Traverse drive output	62	CLDCK	–	Not used
23	PC	–	Not used	63	FLAG	–	Not used
24	ECM	O	Spindle motor drive signal (Enforced mode output) 3-State	64	IPPLAG	–	Not used
25	ECS	O	Spindle motor drive signal (Servo error signal output)	65	FLAG	–	Not used
26	KICK	O	Kick pulse output	66	CLVS	–	Not used
27	TRD	O	Tracking drive output	67	CRC	–	Not used
28	FOD	O	Focus drive output	68	DEMPH		Not used
29	VREF	I	Reference voltage input pin for D/A output block (TVD,FOD,FBA,TBAL)	69	RESY	–	Not used
30	FBAL	O	Focus Balance adjust signal output	70	IOSEL	–	pull up
31	TBAL	O	Tracking Balance adjust signal output	71	TEST	–	pull up
32	FE	I	Focus error signal input(Analog input)	72	AVDD1	–	Power supply(Digital)
33	TE	I	Tracking error signal input(Analog input)	73	OUT L	O	Lch audio output
34	RF ENV	I	RF envelope signal input(Analog input)	74	AVSS1	–	Connected to GND
35	VDET	I	Vibration detect signal input(H:detect)	75	OUT R	O	Rch audio output
36	OFT	I	Off track signal input(H:off track)	76	RSEL	–	pull up
37	TRCRS	I	Track cross signal input	77	CSEL	–	Connected to GND
38	RFDET	I	RF detect signal input(L:detect)	78	PSEL	–	Connected to GND
39	BDO	I	BDO input pin(L:detect)	79	MSEL	–	Connected to GND
40	LDON	O	Laser ON signal output(H:on)	80	SSEL	–	Pull up

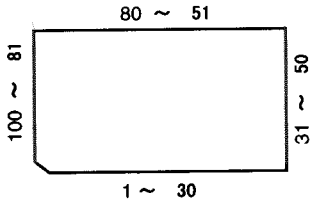
■ TA8409S(IC702):Motor Driver



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	MOTOR
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

■ UPD78F-4216GF509(IC501) : System Controller

1. Terminal Function

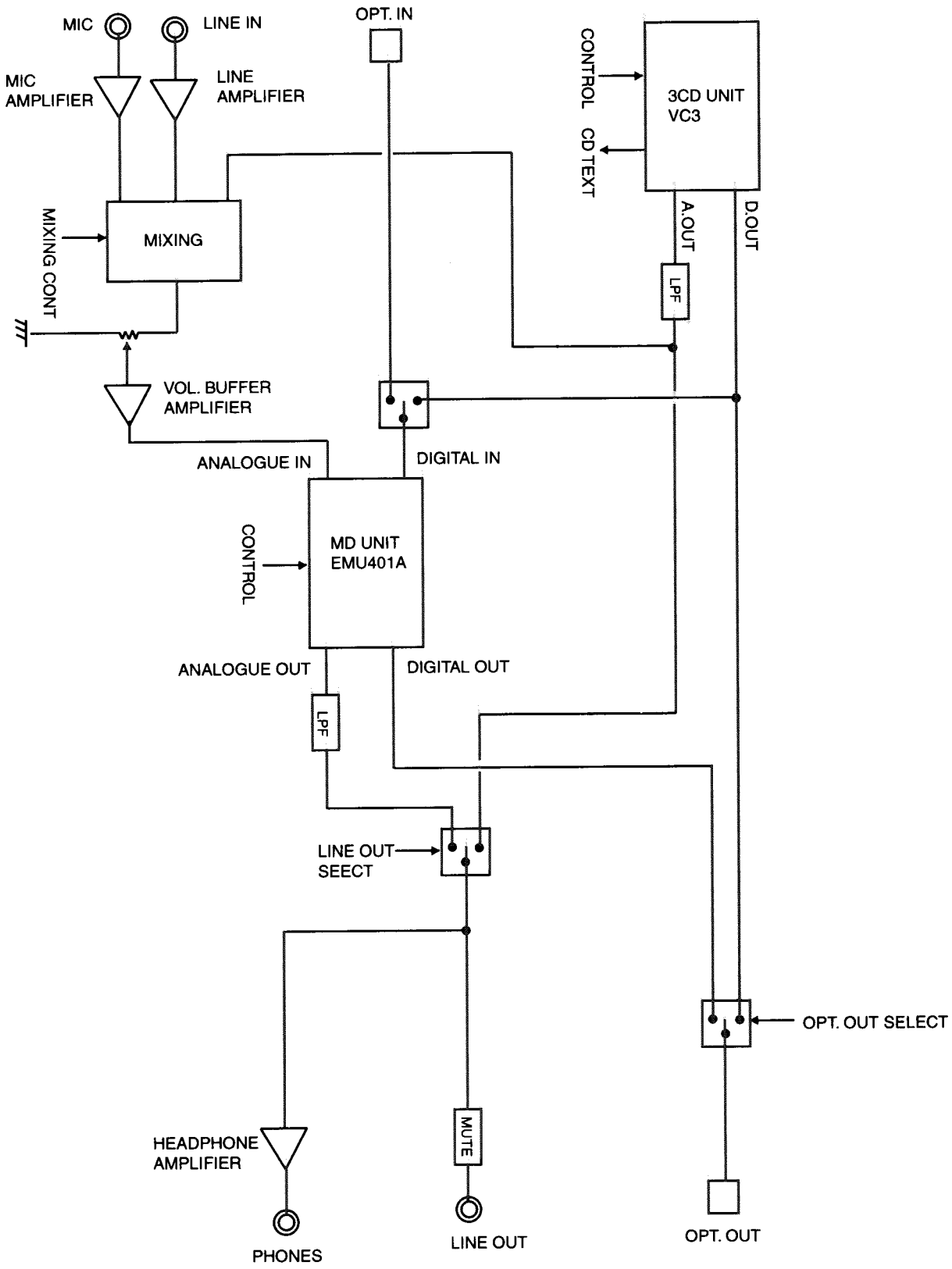


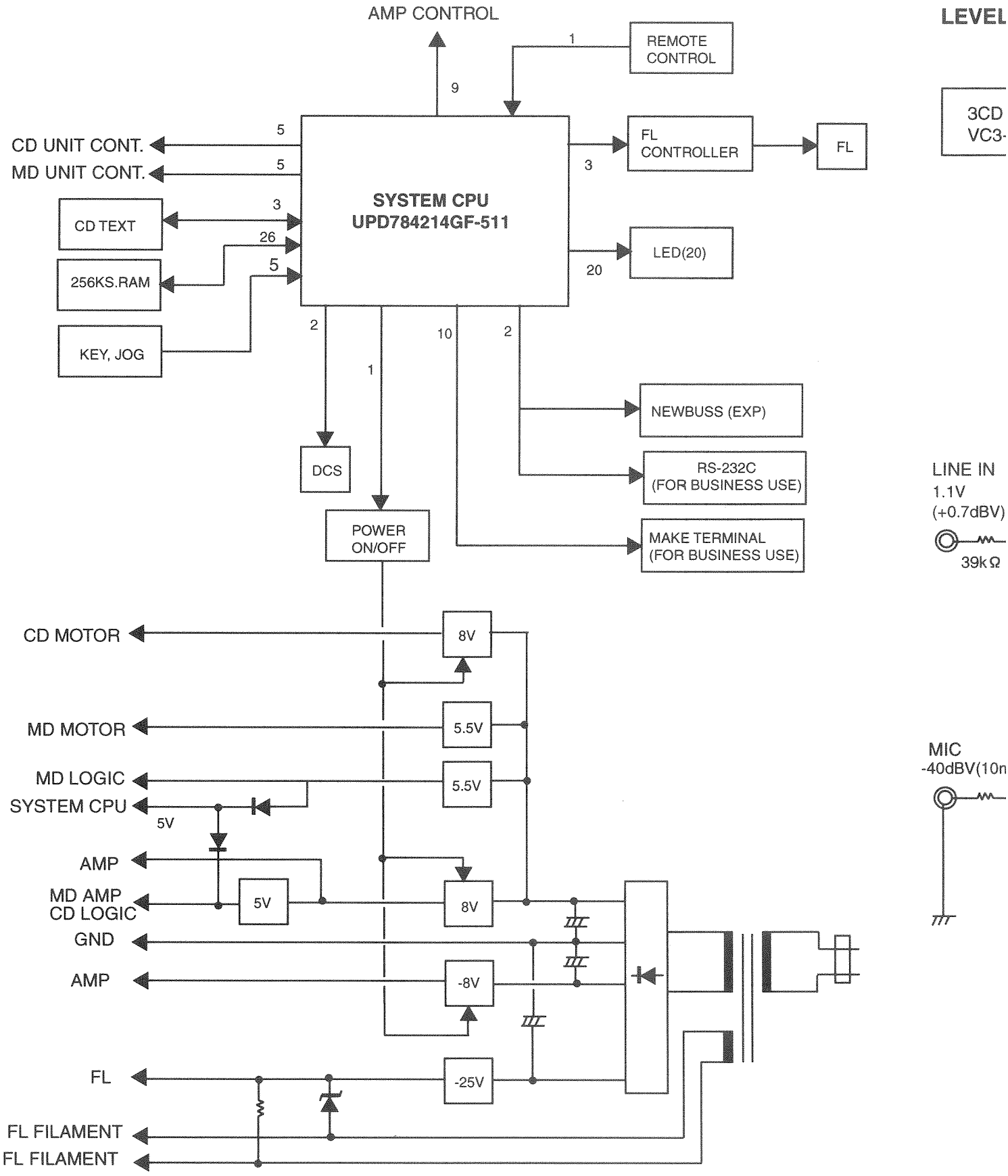
2. Terminal Function

Pin No.	Symbol	I/O	Function
1	NC	O	Non connection
2	NC	O	Non connection
3	NC	O	Non connection
4	TEST	I	Pull up
5	/RD	O	SRAM read . Strobe signal output
6	/WR	O	SRAM read . Strobe signal output
7	/CE	O	SRAM chip enable signal output H : Back up L : SRAM read and write
8	NC	O	Non connection
9	VDD		Power supply
10	CS1	I	Version setting
11	CS2	I	Version setting
12	JOGA	I	JOG switch input A
13	JOGB	I	JOG switch input B
14	FLDAT	O	Data output for Serial data of FL Display
15	FLCLK	O	Clock output for Serial data of FL Display
16	FLCS	O	FL Display chip select output (L : When data output)
17	MPLAY	O	When the meik point of playing , becomes an output. H : Playing
18	MREC	O	When the meik point of recording, becomes an output. H : Recoding
19	MSTOP	O	When the meik point of Synchronization stoppinng, becomes an output. H : Stopping(1.5sec)
20	MKPOF	I	When the meik point of power off, becomes an output. When standby : H →L
21	LCDR	O	When the CD playing,become lighting (H) other : L
22	TEST	I	Connected to GND
23	LPIT+	O	CD speed settingLiths by " L : - 1～+12% ,H : other "
24	LPIT-	O	CD speed settingLiths by " L : - 1～- 12% ,H : other "
25	LBEST	O	When the Best het playing,become lighting (L) other : H
26	LMDM	O	LED output of MD setting, L : MD setting H : CD setting
27	LCDM	O	LED output of CD setting, L : CD setting H : MD setting
28	LLEVE	O	LED output of Input level OK, L : MD/analog recording H : Digital recording
29	MIXBL	O	MIX balance volume control output, L : Turning off H : LED lighting
30	SMUTE	O	System mute L : mute ON H : mute OFF
31	LCLK	O	Port expander cirial data clock output for LED
32	LDATA	O	Port expander cirial data output for LED
33	SCD	O	REC souce CD select
34	SLN1	O	REC souce LINE1 select
35	SLN2	O	REC souce LINE2 select
36	SMIC	O	REC souce MIC select
37	VDD	--	+5V
38	X2	--	Main system clock output
39	X1	--	Main system clock input
40	VSS	--	Connected to GND

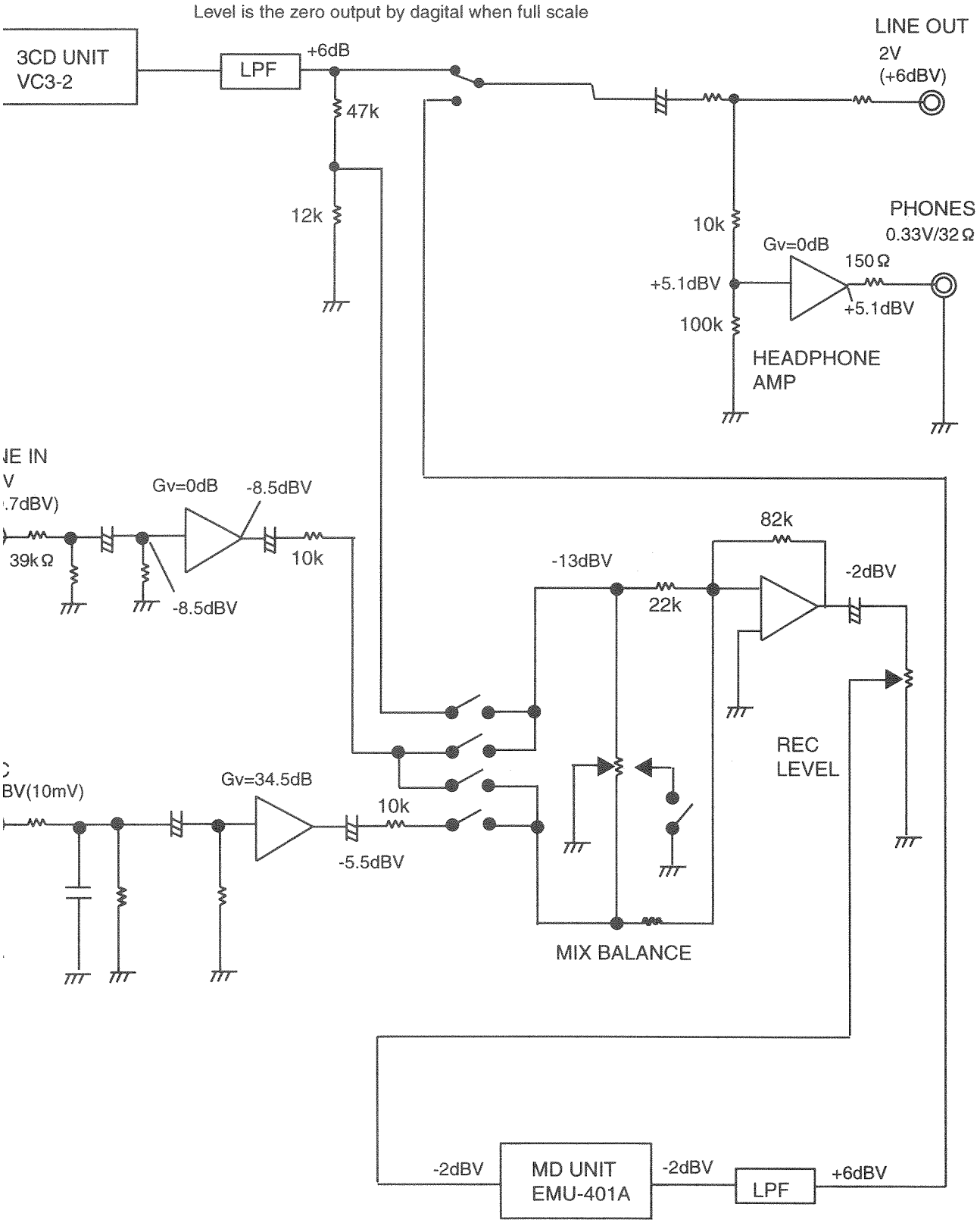
Pin No.	Symbol	I/O	Function
41	XT2	--	Sub system clock output.Connected to X7tal(32.768kHz)
42	XT1	--	Sub system clock output.Connected to X7tal(32.768kHz)
43	RESET	I	Reset signal input
44	REM	I	Remote control signal input
45	TXRDY	I	Permission which can TEXT data be read Down : Permission
46	ACON	I	AC power supply control L : No power supply(Backup mode) H : Operation usually
47	DICD	O	MD digital input control H : CD L :Optical
48	DIOPT	O	MD digital input control L : CD H :Optical
49	DOCD	O	Optical out/Line out select H : CD L :Optical
50	DOMD	O	Optical out/Line out select L : CD H :Optical
51	AVDD	--	AV Conversion circuit power supply(+5V)
52	AVREF0	I	A/D convertor reference voltage in/out
53~55	KEY1~KEY4	I	Key input 1~KEY4
57~59	MIN1~MIN3	I	Meik point input1~3
60	MODE	I	MOde select switch input
61	AVSS	--	AV Conversion circuit power supply(+5V)
62	DCSI	I	DCS data input
63	DCSO	O	DCS data output
64	AVREF1	--	Not use
65	NBUSI	I	New-bus command input(UART)
66	NBUSO	O	New-buscommand output(UART)
67	ASCK2	I	Connected to GND
68	STAT	I	CD/MD status input(UART)
69	COMD	O	CD/MD command output(UART)
70	ASCK1	I	Connected to GND
71	SRST	O	System reset output
72	POWER	O	System power supply control(Standby LED) H : power OFF L : power ON
73	TXDAT	I	TEXT data input
74	NC	O	Non connection
75	TXCLK	O	Clock signal output for TEXT data
76~83	A0~A7	O	SRAM addres 0~7
84~91	AD0~AD7	I/O	SRAM data 0~7
92	A8	O	SRAM addres 8
93	A9	O	SRAM addres 9
94~98	A10~A14	O	SRAM addres 11~14
99	NC	--	Non connection
100	VSS	--	+5V

Block Diagrams

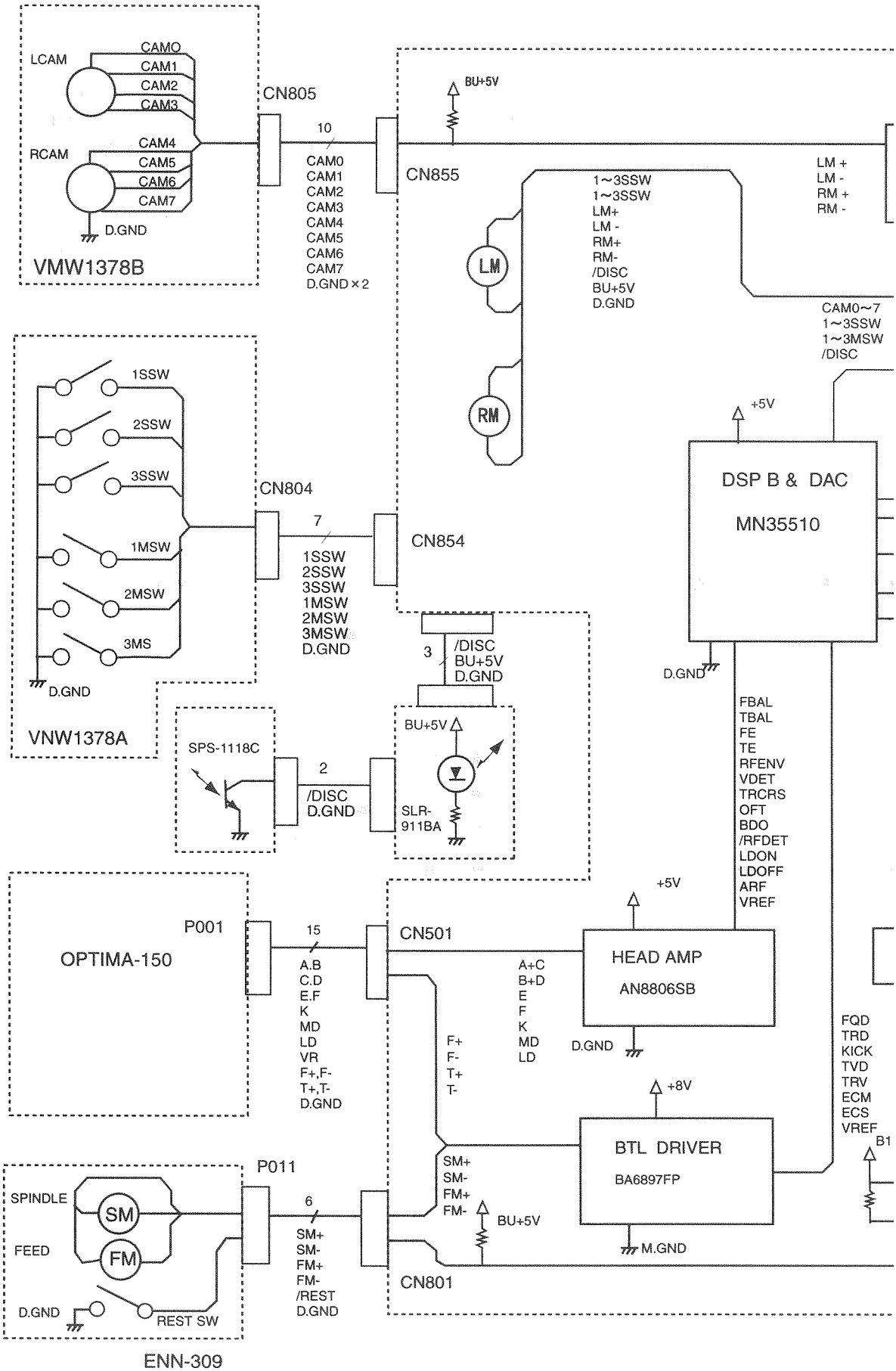


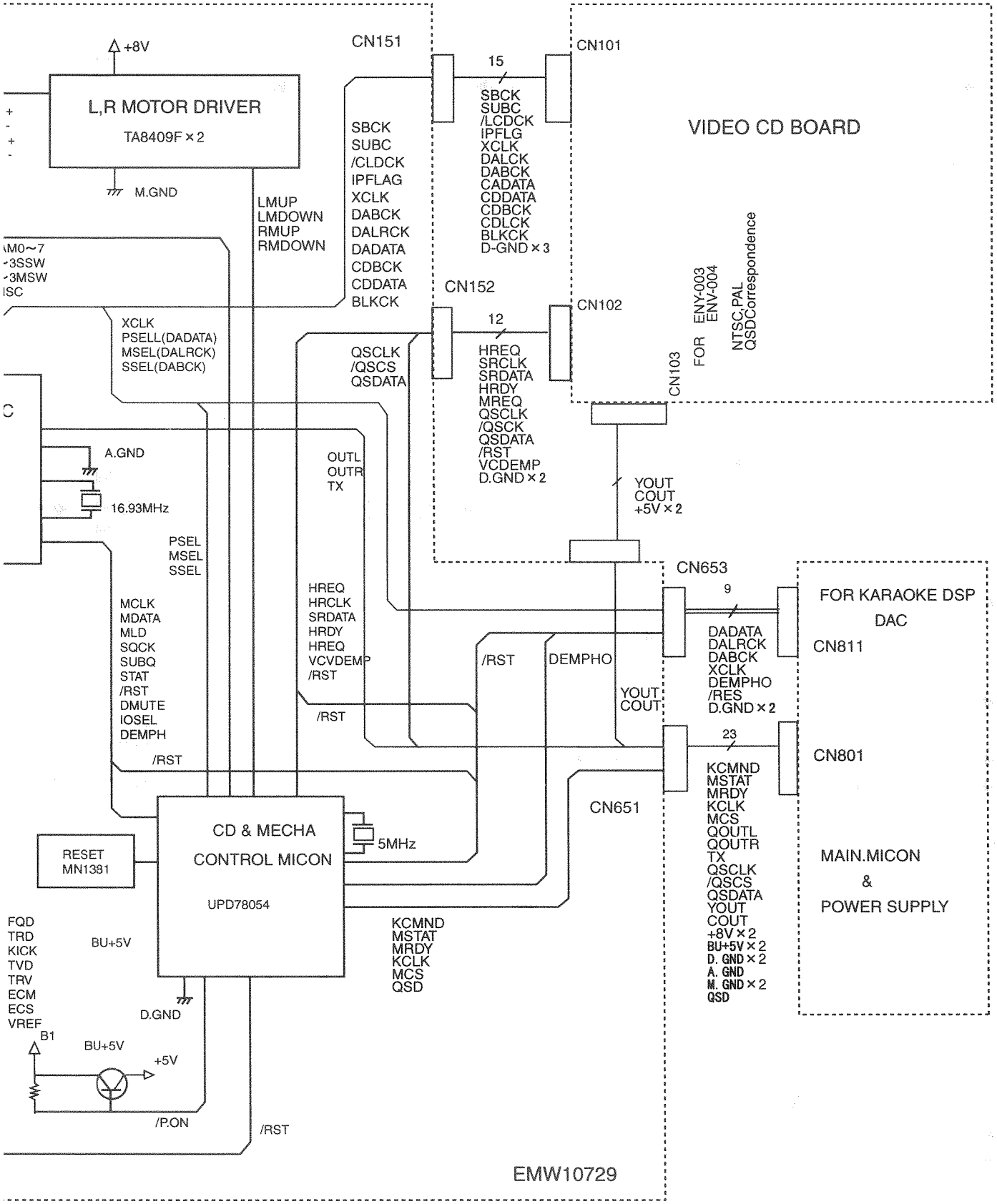

AMP CONTROL
9
1
REMOTE CONTROL
5
CD UNIT CONT.
5
MD UNIT CONT.
3
CD TEXT
26
5
256KS.RAM
KEY, JOG
SYSTEM CPU
UPD784214GF-511
FL CONTROLLER
3
FL
LED(20)
20
2
1
10
2
NEWBUSS (EXP)
RS-232C
(FOR BUSINESS USE)
MAKE TERMINAL
(FOR BUSINESS USE)
DCS
POWER
ON/OFF
CD MOTOR
8V
MD MOTOR
5.5V
MD LOGIC
5.5V
SYSTEM CPU
5V
AMP
MD AMP
CD LOGIC
5V
8V
GND
AMP
-8V
FL
-25V
FL FILAMENT
FL FILAMENT
LEVEL
3CD
VC3-
LINE IN
1.1V
(+0.7dBV)
39kΩ
MIC
-40dBV(10n

EVEL DIAGRAM



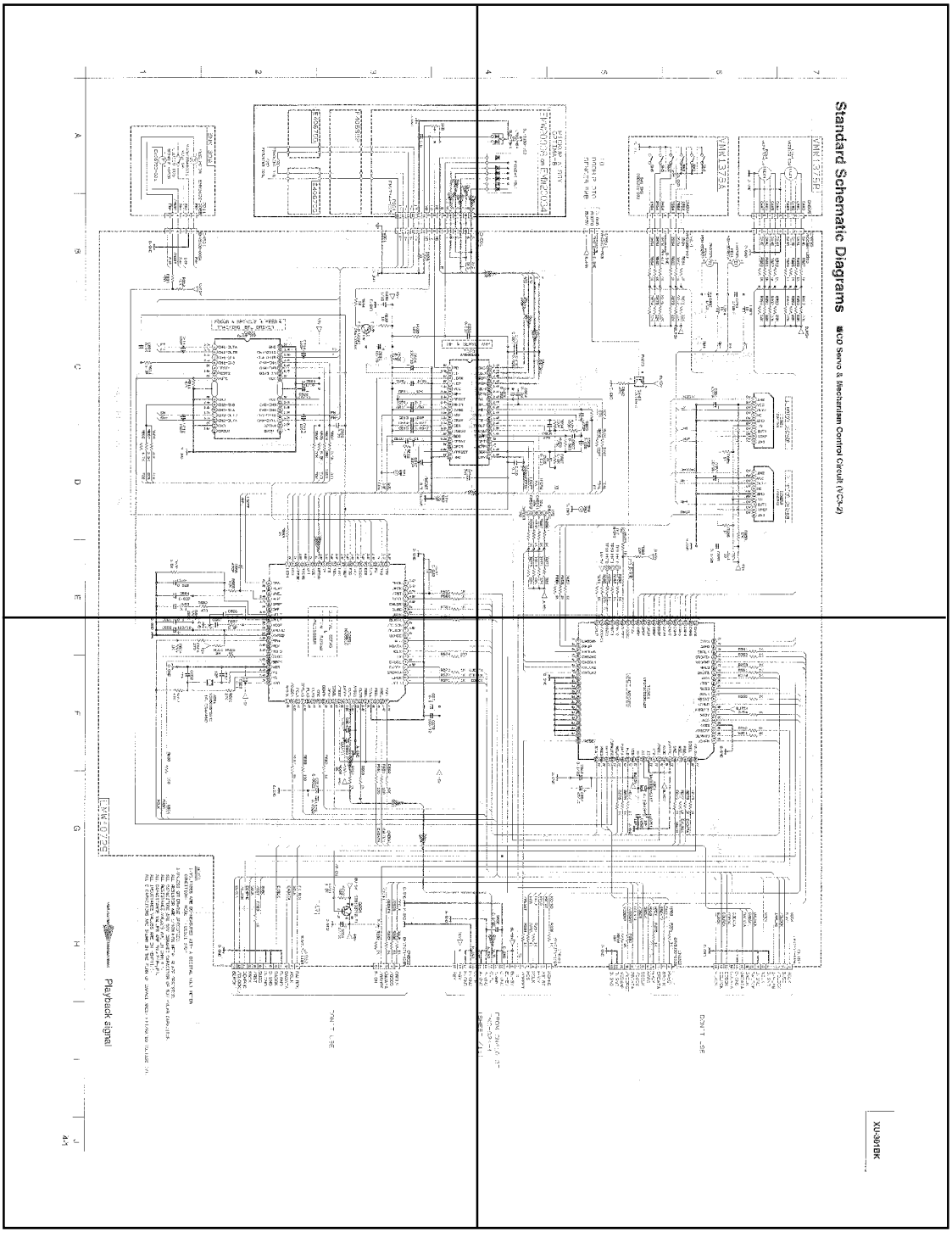
■ VC3 CD Servo & Mechanism Control Block Diagram




+8V
L,R MOTOR DRIVER
TA8409F × 2
M.GND
LMUP
LMDOWN
RMUP
RMDOWN
CN151
15
SBCK
SUBC
/LCDCK
IPFLG
XCLK
DALCK
DABCK
CADATA
CDDATA
CDBCK
CDLCK
BLKCK
D-GND × 3
CN101
VIDEO CD BOARD
SBCK
SUBC
/CLDCK
IPFLAG
XCLK
DABCK
DALRCK
DADATA
CDBCK
CDDATA
BLKCK
CN152
12
HREQ
SRCLK
SRDATA
HRDY
MREQ
QSCLK
/QSCK
QSDATA
/RST
VCDEMP
D.GND × 2
CN102
CN103
FOR ENY-003 ENV-004 NTSC,PAL QSDCorrespondence
XCLK
PSELL(DADATA)
MSEL(DALRCK)
SSEL(DABCK)
QSCLK
/QSCS
QSDATA
A.GND
16.93MHz
OUTL
OUTR
TX
YOUT
COUT
+5V × 2
PSEL
MSEL
SSEL
CN653
9
DADATA
DALRCK
DABCK
XCLK
DEMPHO
/RES
D.GND × 2
FOR KARAOKE DSP
DAC
CN811
MCLK
MDATA
MLD
SQCK
SUBQ
STAT
/RST
DMUTE
IOSEL
DEMPH
HREQ
HRCLK
SRDATA
HRDY
HREQ
VCVDEMP
/RST
/RST
/RST
DEMPHO
YOUT
COUT
23
KCMND
MSTAT
MRDY
KCLK
MCS
QOUTL
QOUTR
TX
QSCLK
/QSCS
QSDATA
YOUT
COUT
+8V × 2
BU+5V × 2
D. GND × 2
A. GND
M. GND × 2
QSD
CN801
CN651
MAIN.MICON
&
POWER SUPPLY
CD & MECHA
CONTROL MICON
UPD78054
5MHz
RESET
MN1381
KCMND
MSTAT
MRDY
KCLK
MCS
QSD
FQD
TRD
KICK
TVD
TRV
ECM
ECS
VREF
BU+5V
D.GND
B1
BU+5V
+5V
/P.ON
/RST
EMW10729

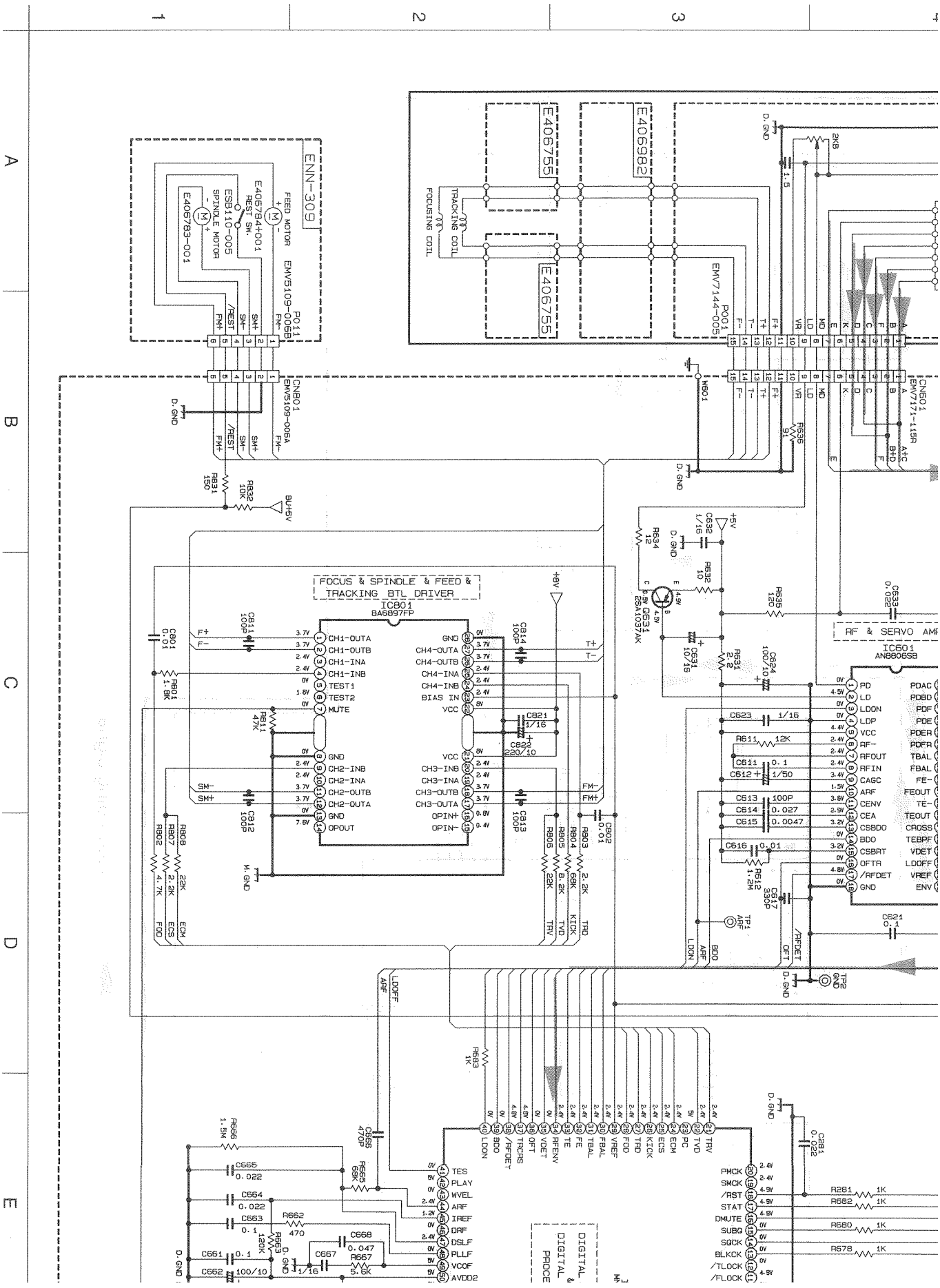
P4-1-a

P4-1-b



P4-1-c

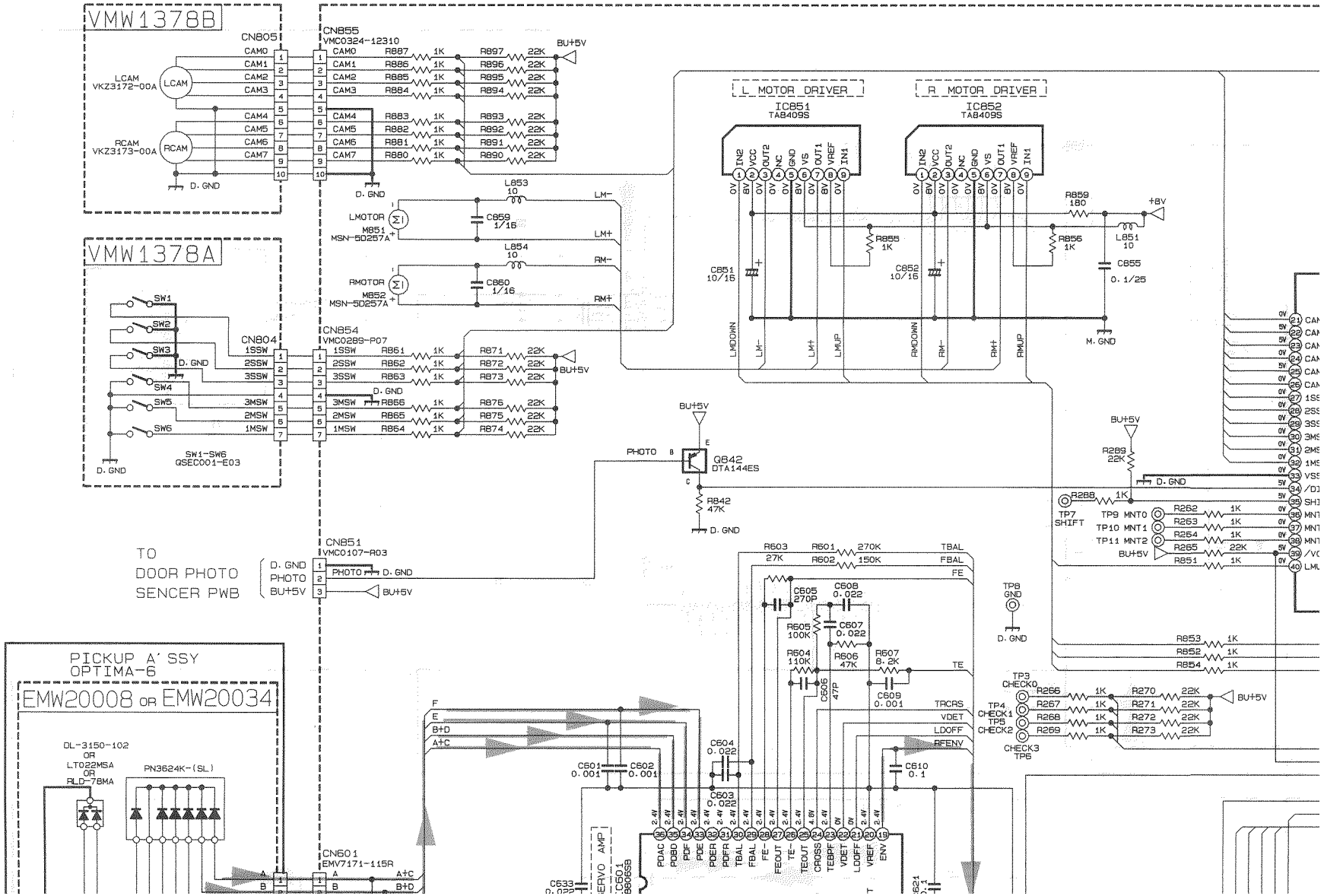
P4-1-d

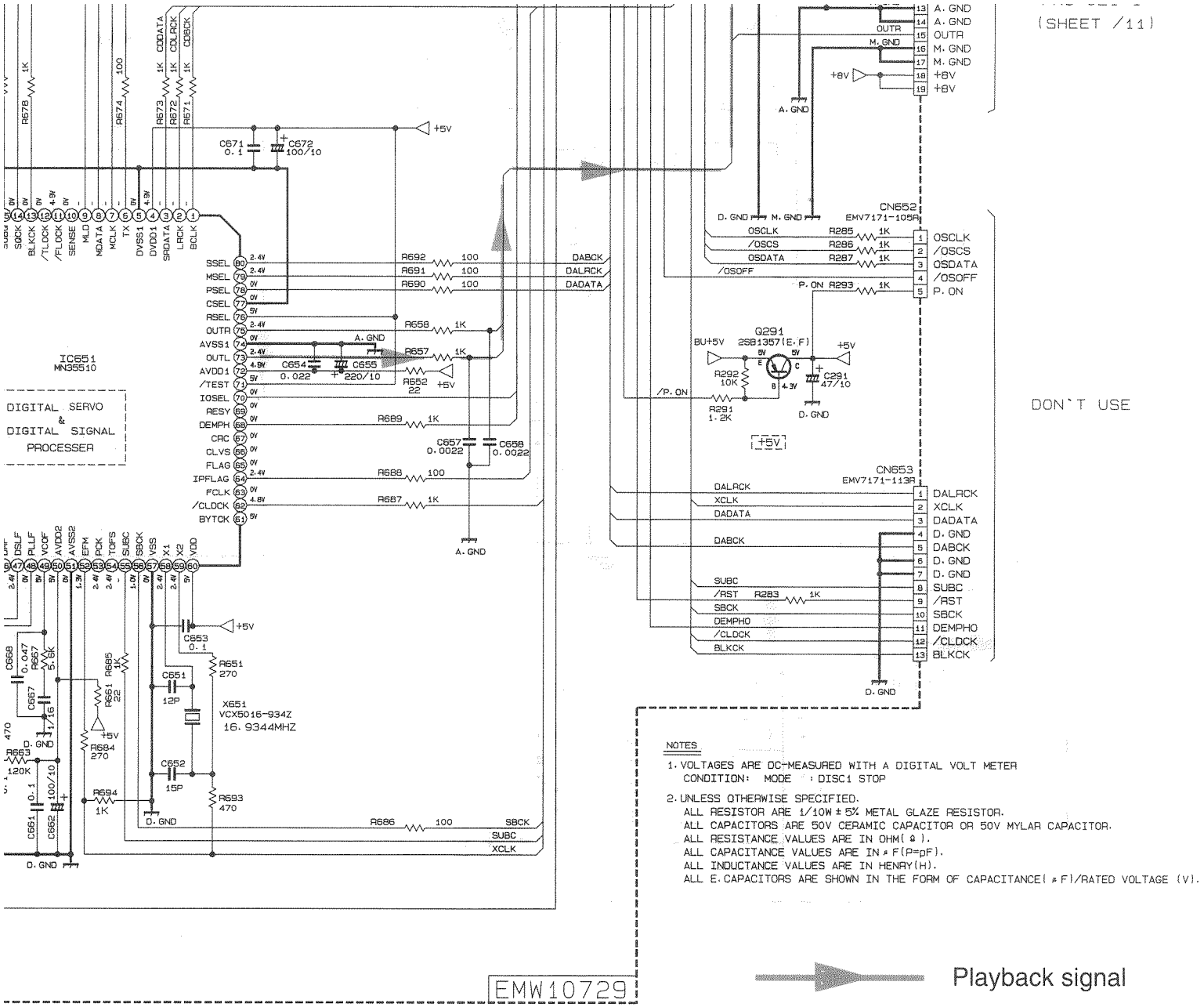

ENN-309
FEED MOTOR
SPINDLE MOTOR
E406784-001
REST SW.
ESB110-005
E406783-001
P011
EMV5109-006B
CN801
EMV5109-006A
E406755
E406982
E406755
TRACKING COIL
FOCUSING COIL
P001
EMV7144-005
CN501
EMV7171-15R
W501
D.GND
BU+5V
+5V
+8V
FOCUS & SPINDLE & FEED &
TRACKING BTL DRIVER
IC801
BA6897FP
CH1-OUTA
CH1-OUTB
CH1-INA
CH1-INB
TEST1
TEST2
MUTE
GND
CH2-INB
CH2-INA
CH2-OUTB
CH2-OUTA
OPOUT
VCC
CH3-INB
CH3-INA
CH3-OUTB
CH3-OUTA
OPIN+
OPIN-
CH4-OUTA
CH4-OUTB
CH4-INA
CH4-INB
BIAS IN
RF & SERVO AMP
IC601
ANB806SB
PD
LD
LDON
LDP
VCC
RF-
RFOUT
RFIN
CAGC
ARF
CENV
CEA
CSBDO
BDO
CSBRT
OFTR
/RFDET
GND
PDAC
PDBD
PDF
PDE
PDER
PDFR
TBAL
FBAL
FE-
FEOUT
TE-
TEOUT
CROSS
TEBPF
VDET
LDOFF
VREF
ENV
TES
PLAY
WVEL
ARF
IREF
DRF
DSLF
PLLF
VCOF
AVDD2
PMCK
SMCK
/RST
STAT
DMUTE
SUBQ
SQCK
BLKCK
/TLOCK
/FLOCK
DIGITAL
DIGITAL &

P4-1-a

Standard Schematic Diagrams

■CD Servo & Mechanism Control Circuit (VC3-2)

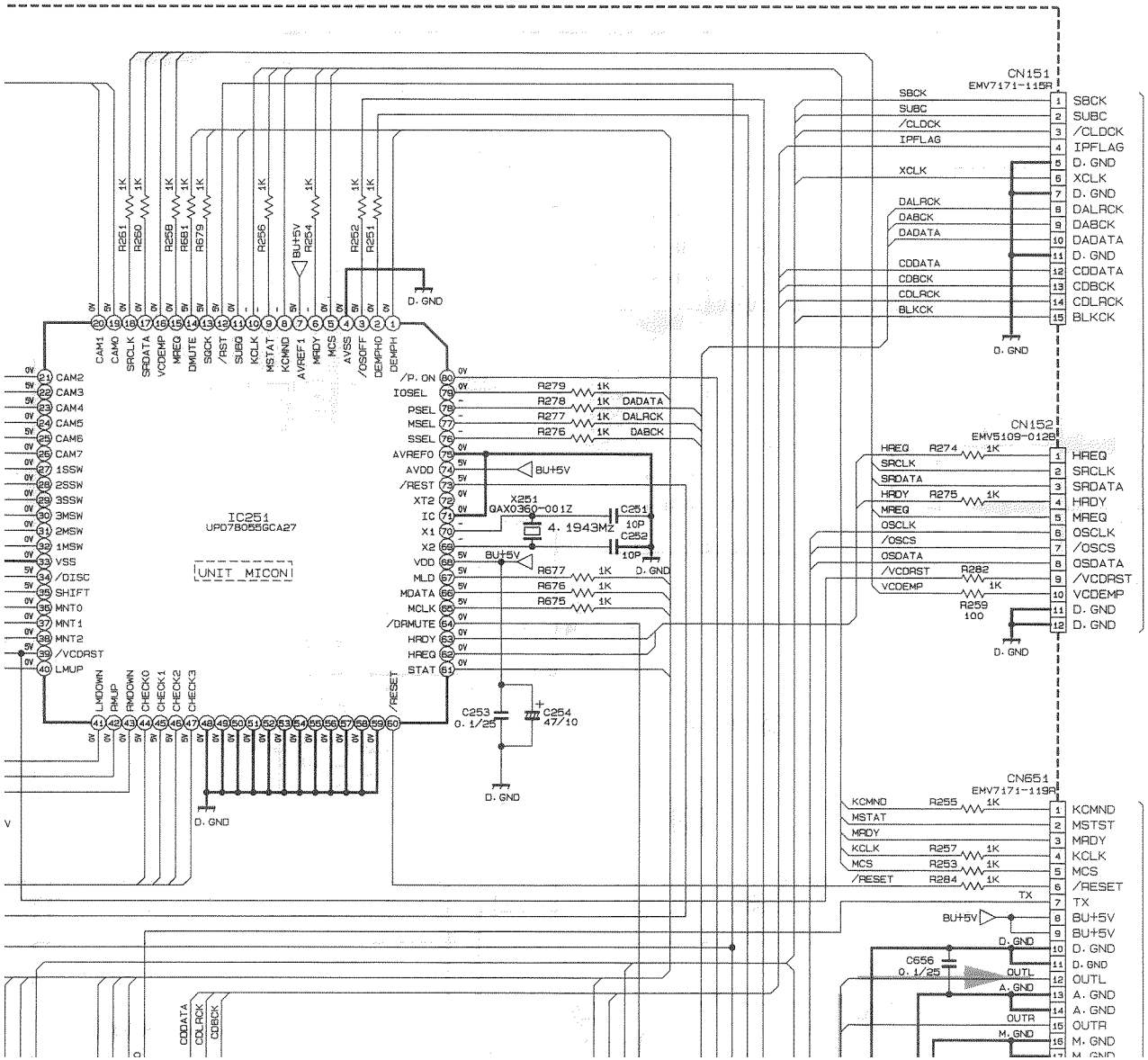




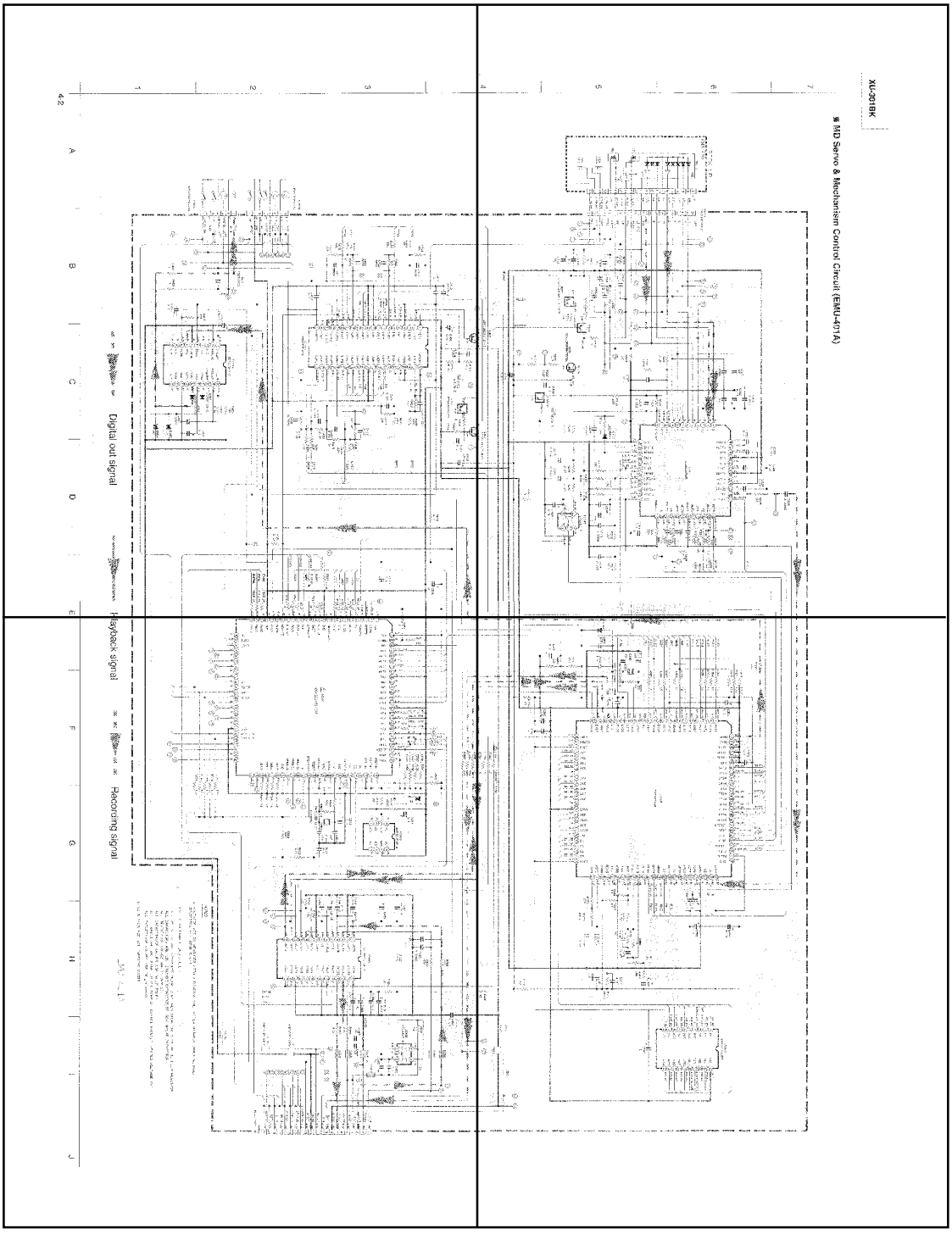
F G H I J

4-1

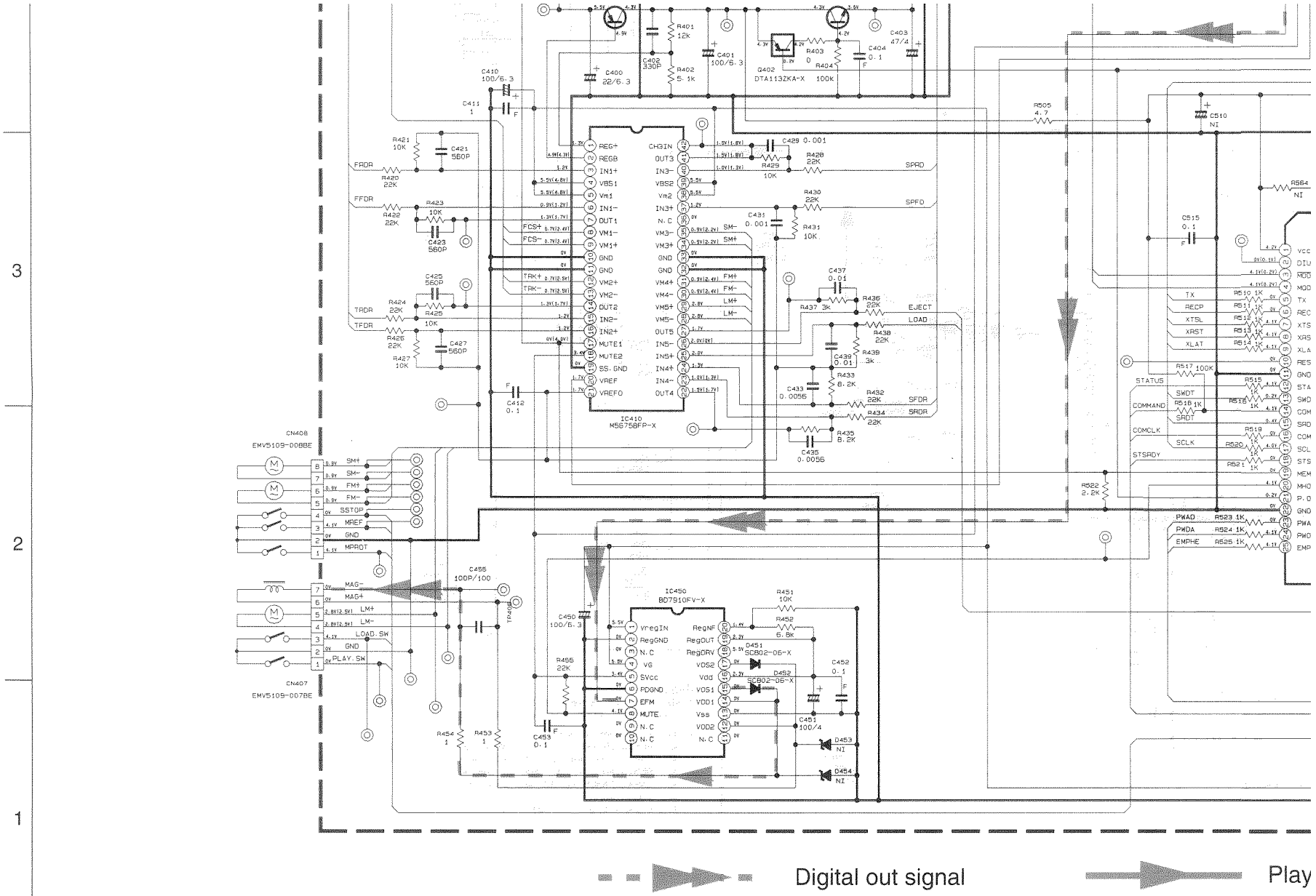
P4-1-c


IC251
UPD78055GCA27
UNIT MICON
X251
GAX0360-001Z
4.1943MZ
C251
10P
C252
10P
C253
0.1/25
C254
47/10
C656
0.1/25
R279 1K
R278 1K
R277 1K
R276 1K
R677 1K
R676 1K
R675 1K
R274 1K
R275 1K
R282 1K
R259 100
R255 1K
R257 1K
R253 1K
R284 1K
R261 1K
R260 1K
R258 1K
R681 1K
R679 1K
R256 1K
R254 1K
R252 1K
R251 1K
BU+5V
D. GND
A. GND
M. GND
CN151
EMV7171-115R
SBCK
SUBC
/CLDCK
IPFLAG
D. GND
XCLK
D. GND
DALRCK
DABCK
DADATA
D. GND
CDDATA
CDBCK
CDLRCK
BLKCK
D. GND
CN152
EMV5109-0128
HREQ
SRCLK
SRDATA
HRDY
MREQ
OSCLK
/OSCS
OSDATA
/VCDRST
VCDEMP
D. GND
D. GND
CN651
EMV7171-119R
KCMND
MSTAT
MRDY
KCLK
MCS
/RESET
TX
BU+5V
BU+5V
D. GND
D. GND
D. GND
OUTL
A. GND
A. GND
OUTR
M. GND
M. GND
DON'T USE
FROM CN410 OF
FMC-021-1
(SHEET /11)

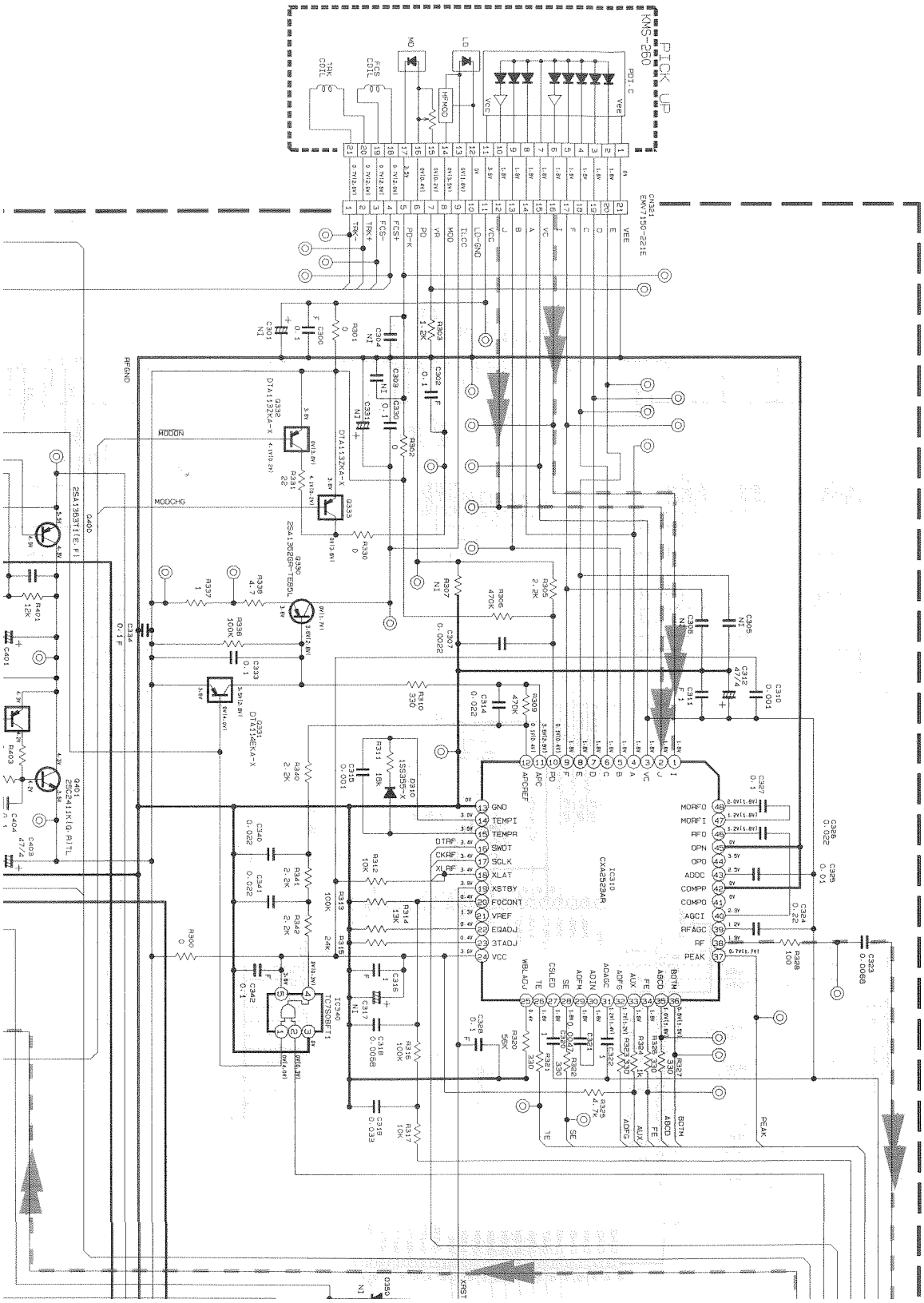
P4-2-a P4-2-b

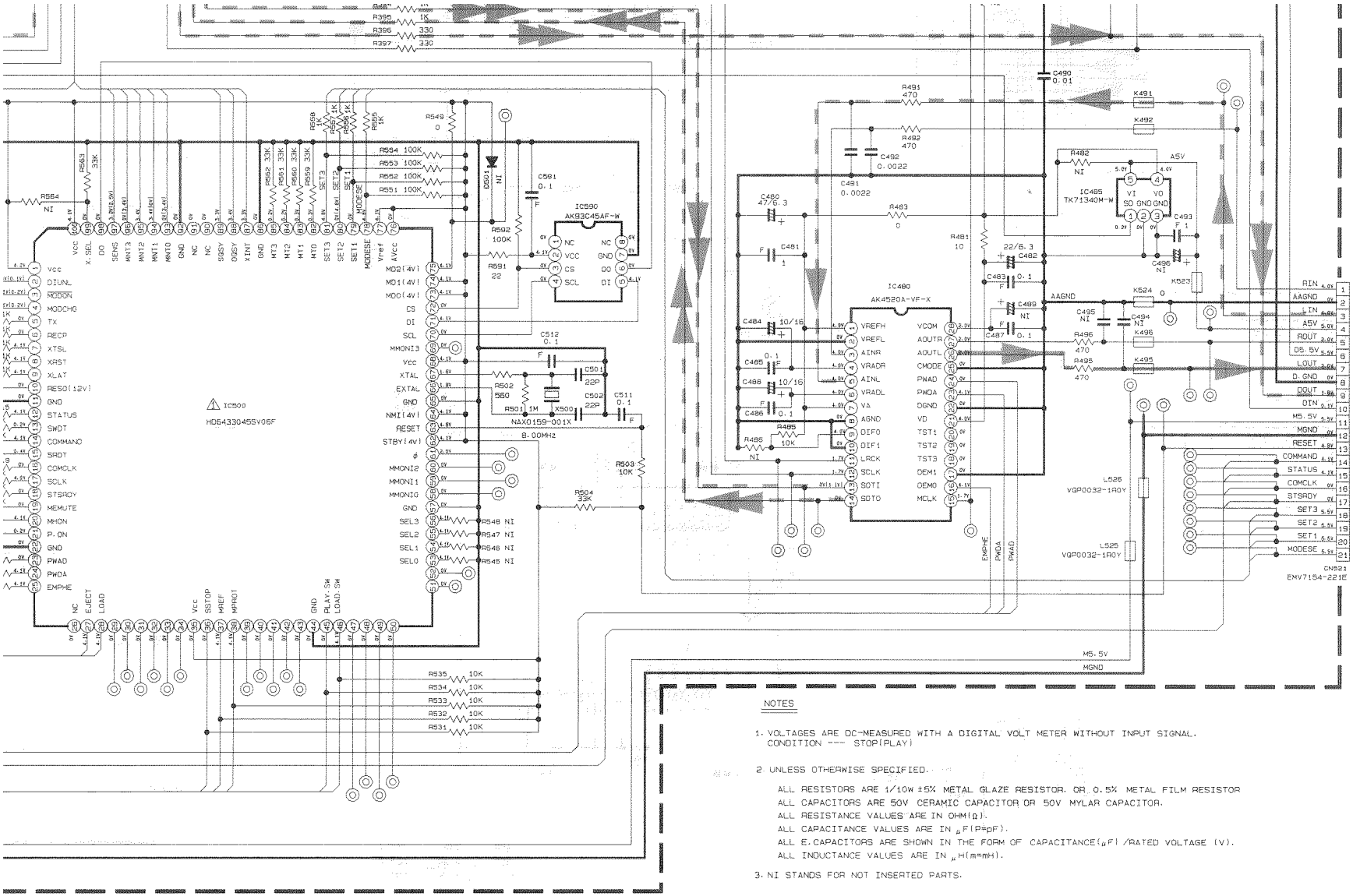


P4-2-c P4-2-d


IC410
M56756FP-X
IC450
B07910FV-X
CN408
EMV5109-008BE
CN407
EMV5109-007BE
Digital out signal
Play

■ MD Servo & Mechanism Control Circuit (EMU-401A)

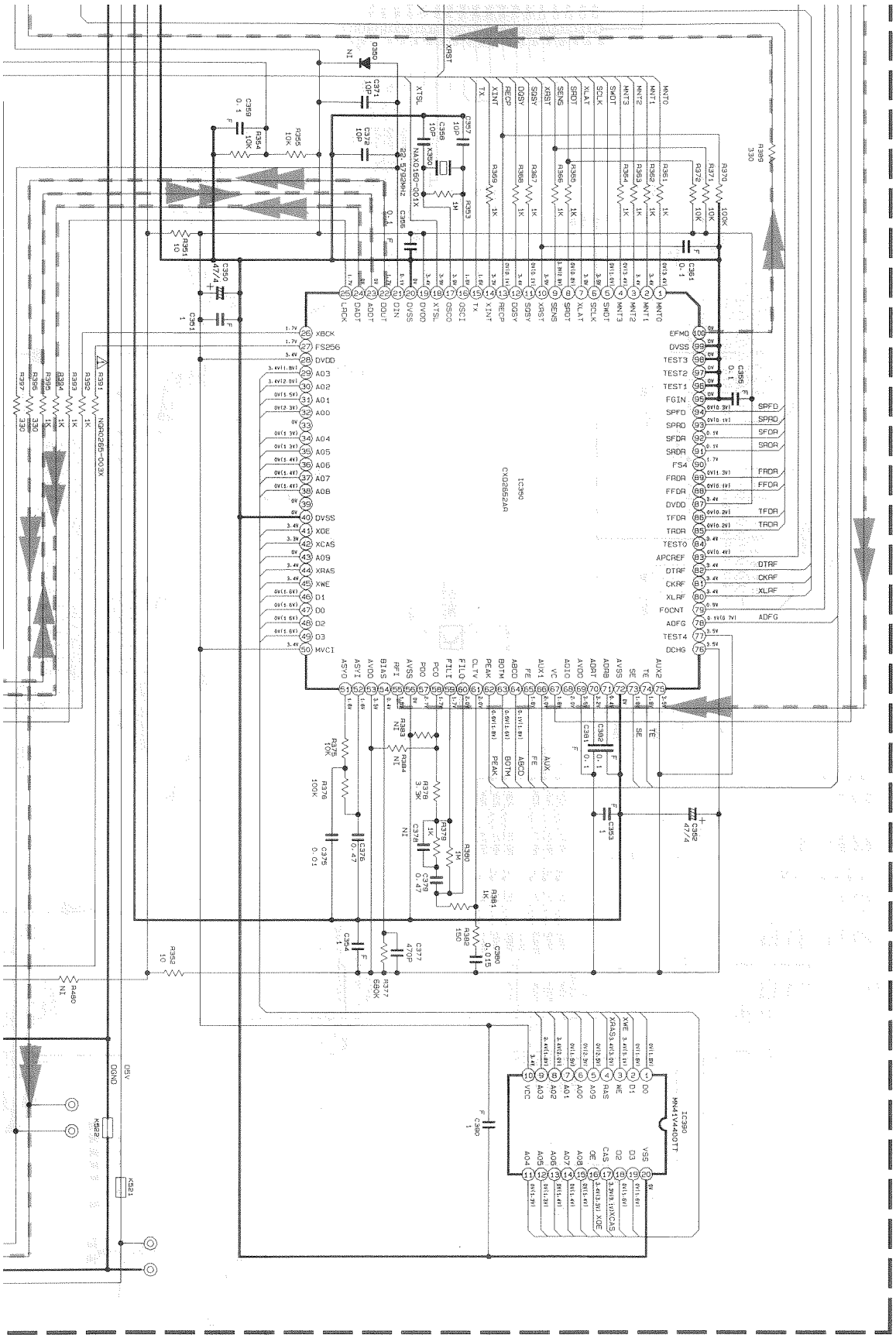




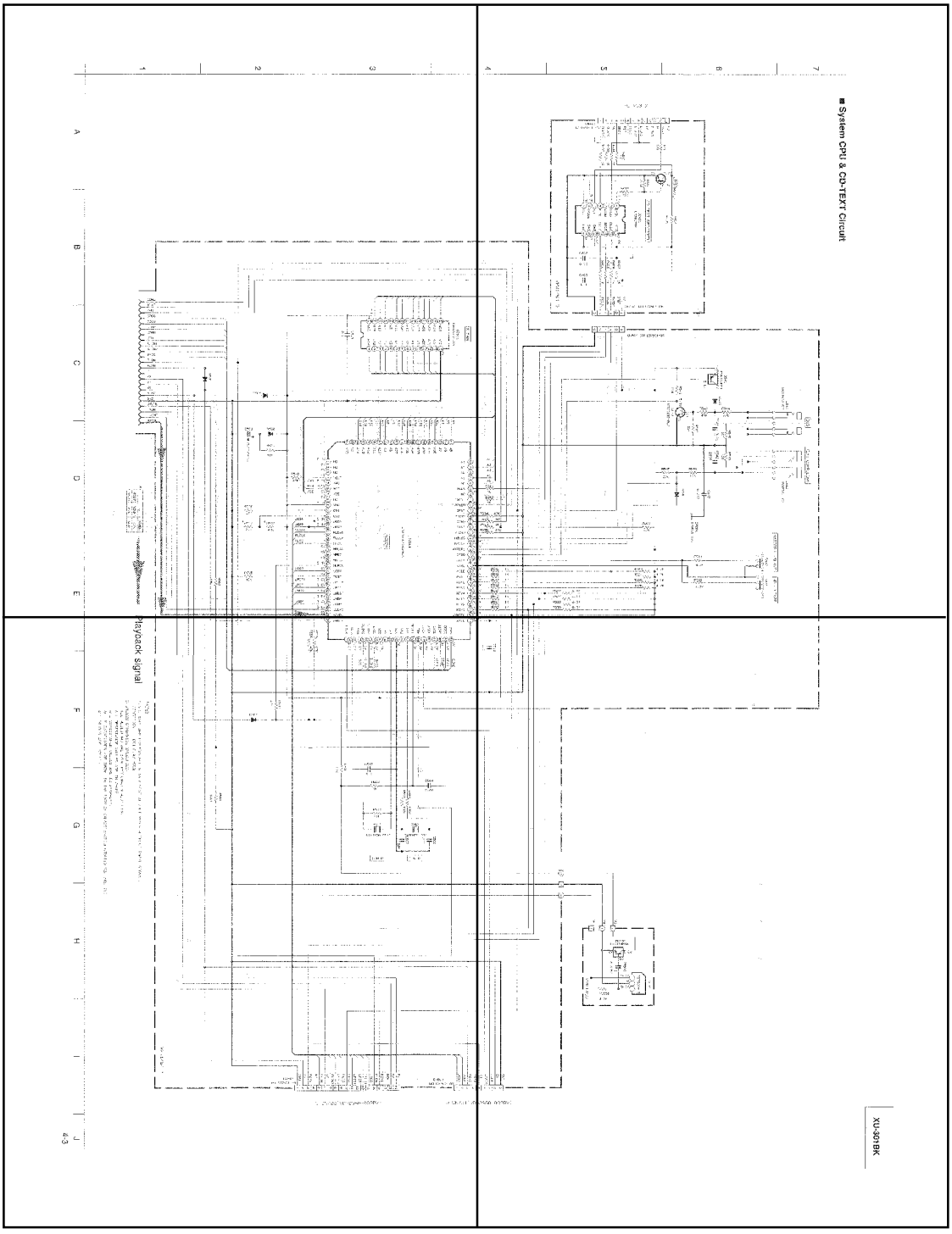
EMU-401A

E F G H I J

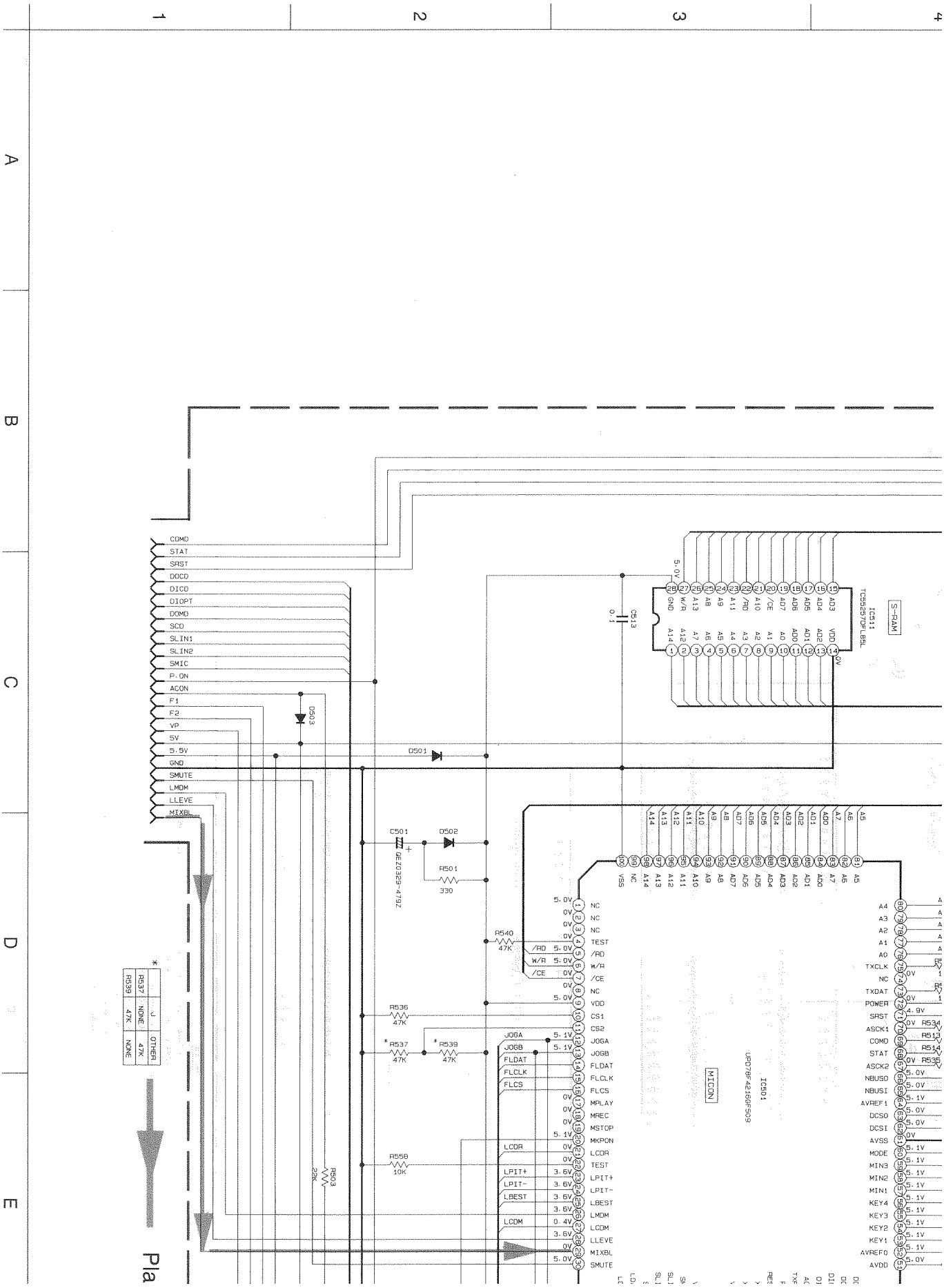
P4-2-c



P4-3-a P4-3-b

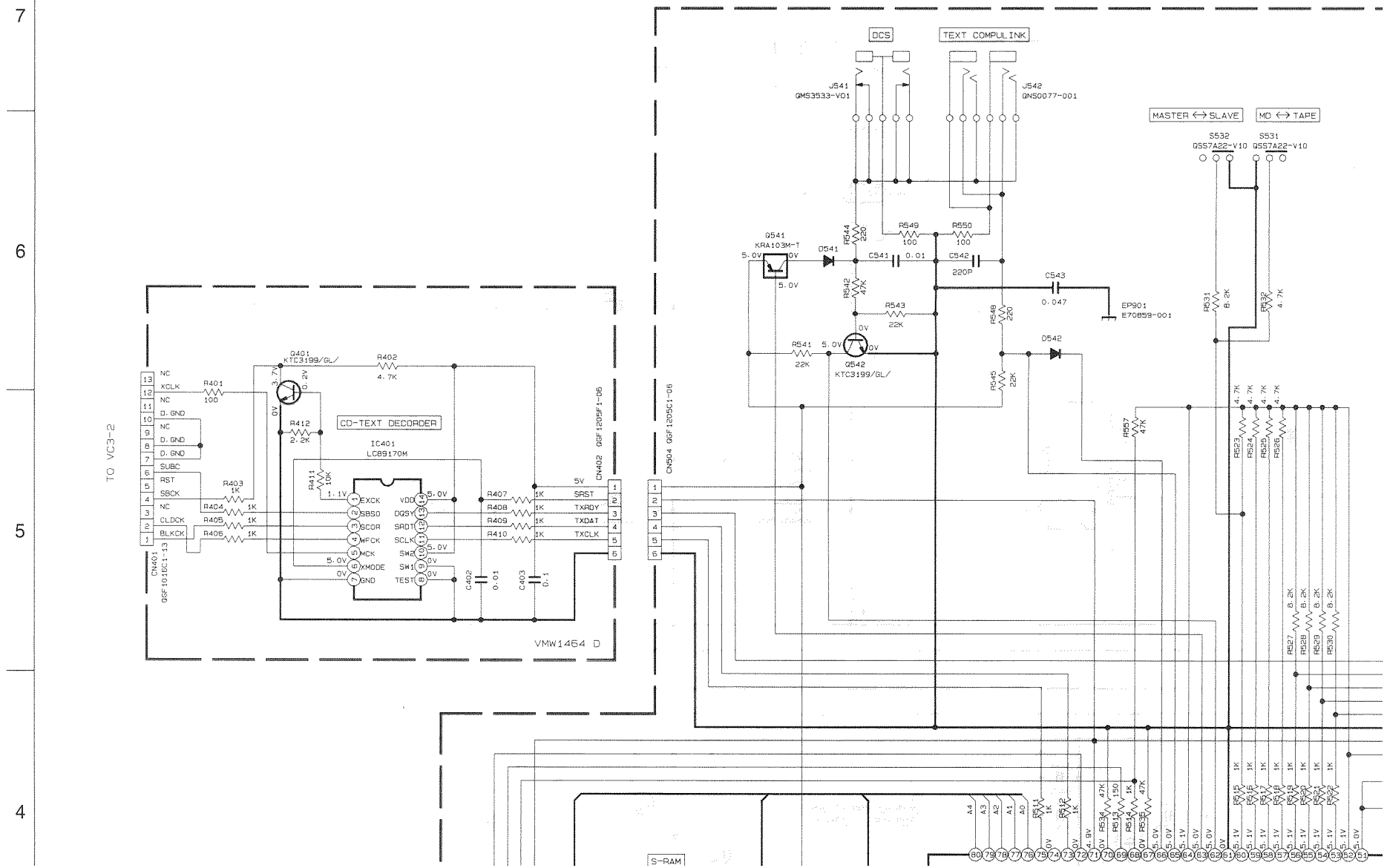


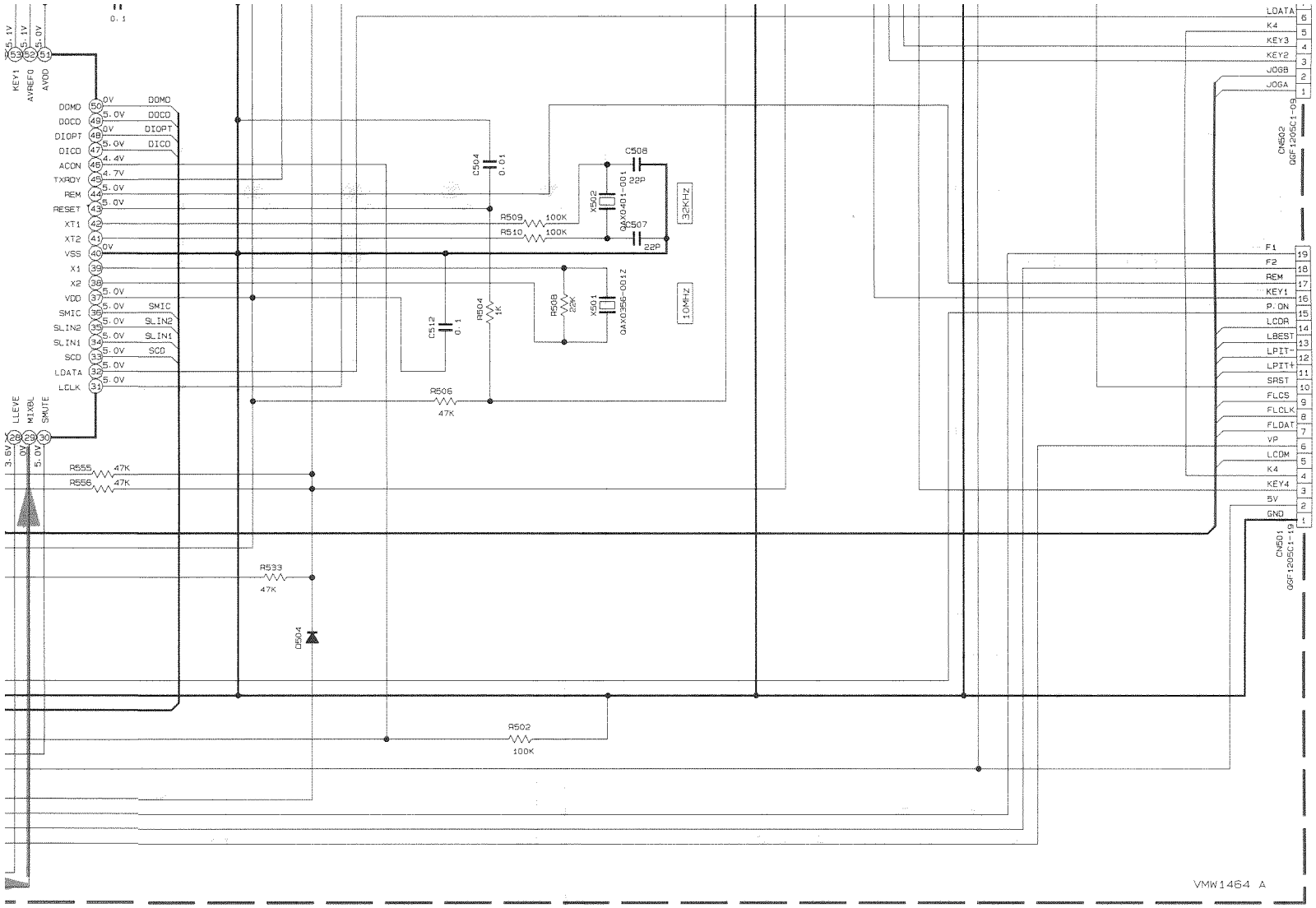
P4-3-c P4-3-d


1
2
3
4
A
B
C
D
E
COMD
STAT
SRST
DOCD
DICD
DIOPT
DOMD
SCD
SLIN1
SLIN2
SMIC
P.ON
ACON
F1
F2
VP
5V
5.5V
GND
SMUTE
LMDM
LLEVE
MIXBL
S-RAM
IC511
TC55257DFL-85L
C513
0.1
D503
D501
D502
C501
GE20329-479Z
R501
330
R540
47K
R536
47K
R537
47K
R539
47K
R558
10K
R503
22K
IC501
UPD78F4216GF509
MICON
JOGA
JOGB
FLDAT
FLCLK
FLCS
MPLAY
MREC
MSTOP
MKPON
LCDR
LCDR
TEST
LPIT+
LPIT-
LBEST
LMDM
LCDM
LLEVE
MIXBL
SMUTE
/RD
W/R
/CE
VSS
VDD
CS1
CS2
NC
TEST
TXCLK
TXDAT
POWER
SRST
ASCK1
COMD
STAT
ASCK2
NBUSO
NBUSI
AVREF1
DCSO
DCSI
AVSS
MODE
MIN3
MIN2
MIN1
KEY4
KEY3
KEY2
KEY1
AVREF0
AVDD
NONE
OTHER
Pla

P4-3-a

■ System CPU & CD-TEXT Circuit



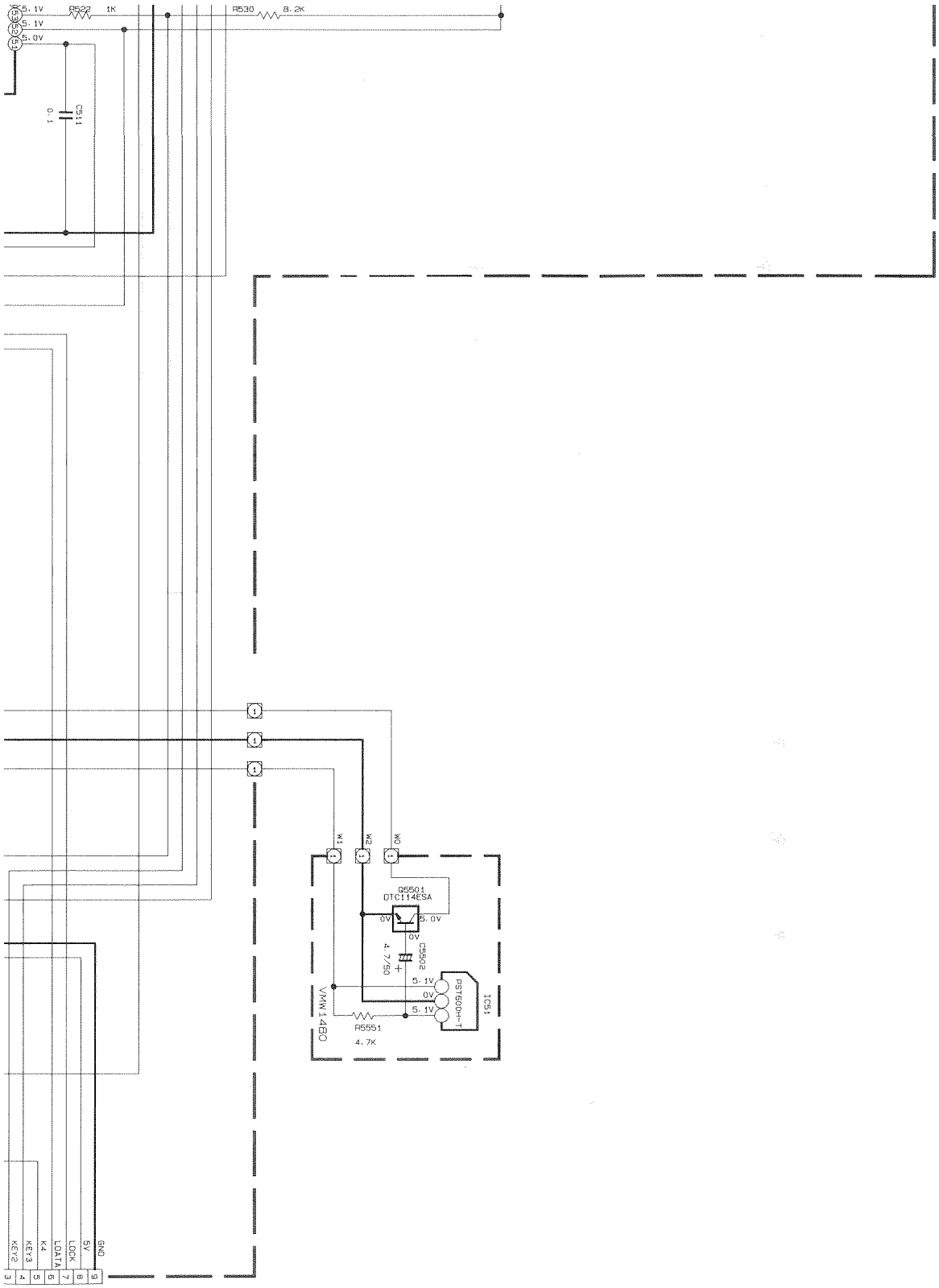


Playback signal

NOTES

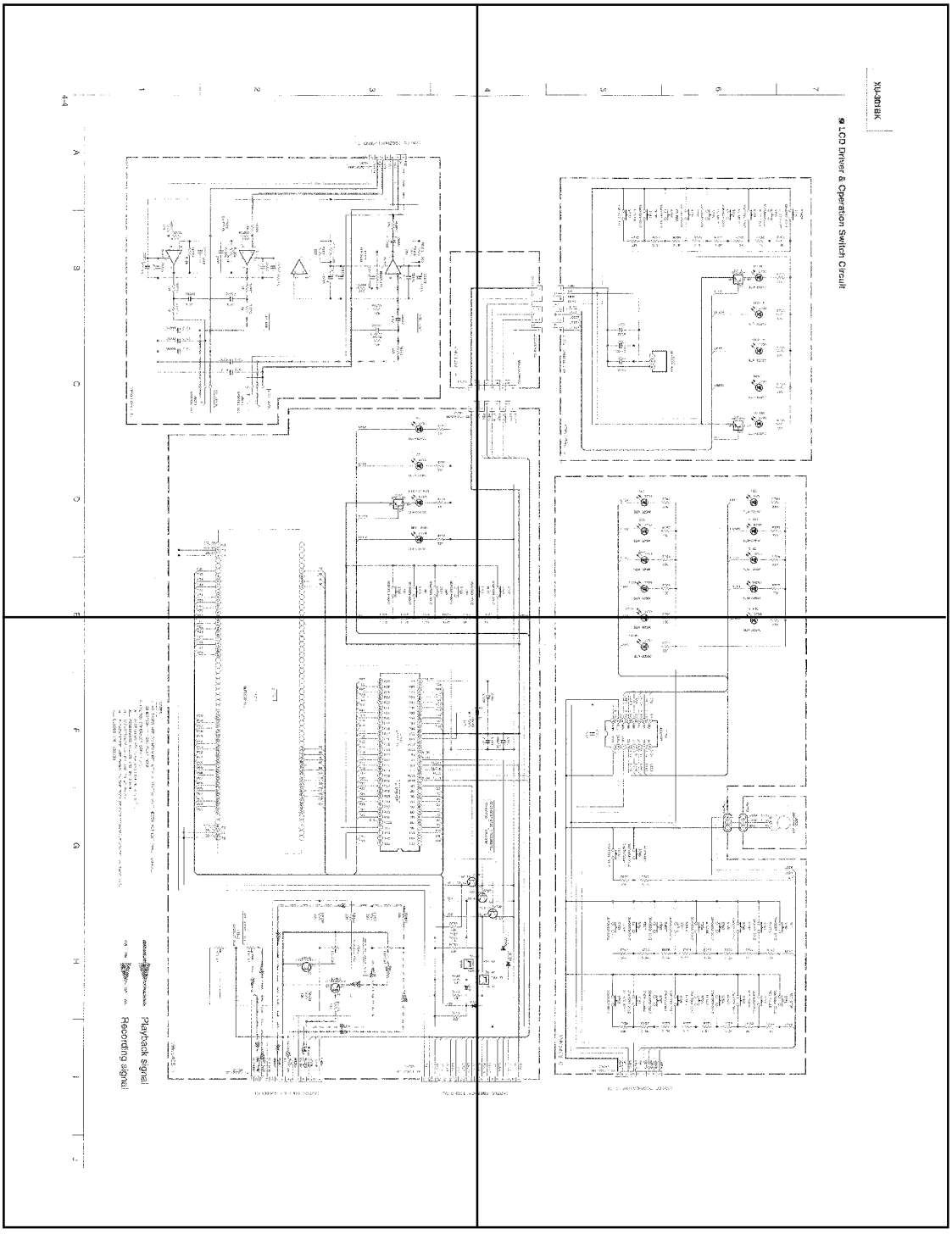
1. VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER WITHOUT INPUT SIGNAL.
   CONDITION ---CD1 PLAY MODE
2. UNLESS OTHERWISE SPECIFIED.
   ALL RESISTORS ARE 1/6W ±5% CARBON RESISTOR.
   ALL RESISTANCE VALUES ARE IN OHM(Ω).
   ALL CAPACITANCE VALUES ARE IN μF(P=pF).
   ALL E.CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE(μF)/RATED VOLTAGE (V).
   ALL DIODES ARE 1SS133

F G H I J

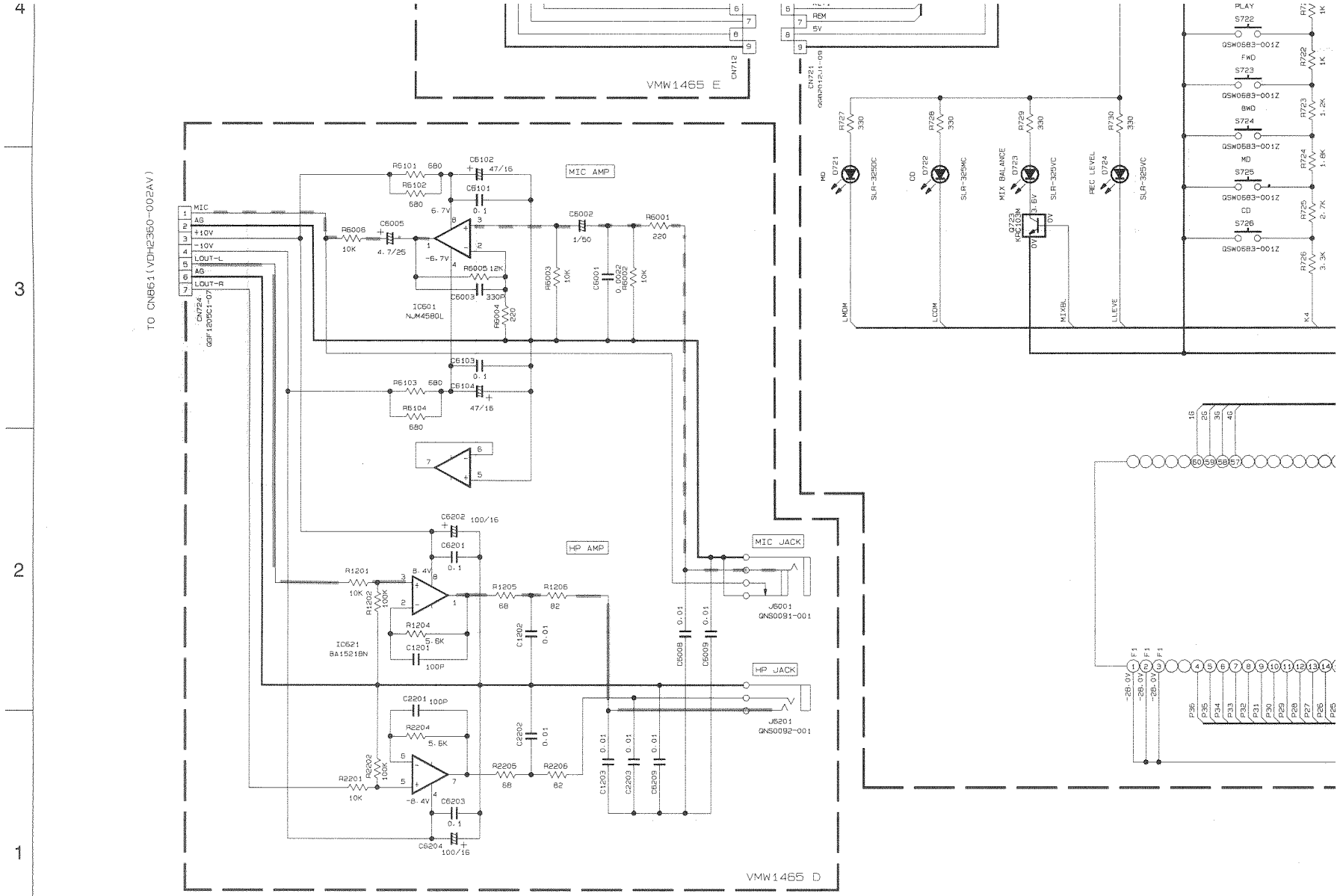


(VDH2360-002BV)

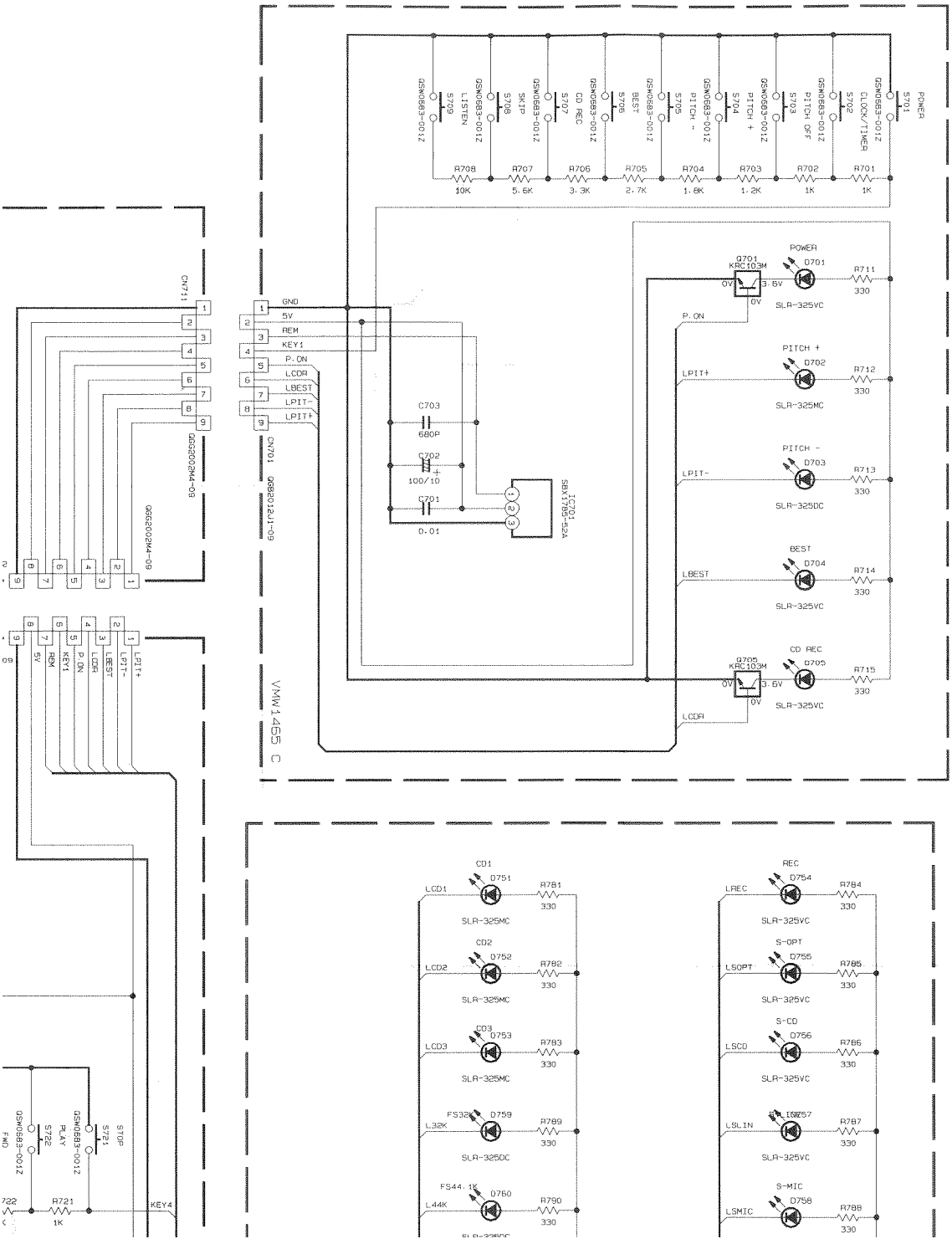
P4-4-a P4-4-b

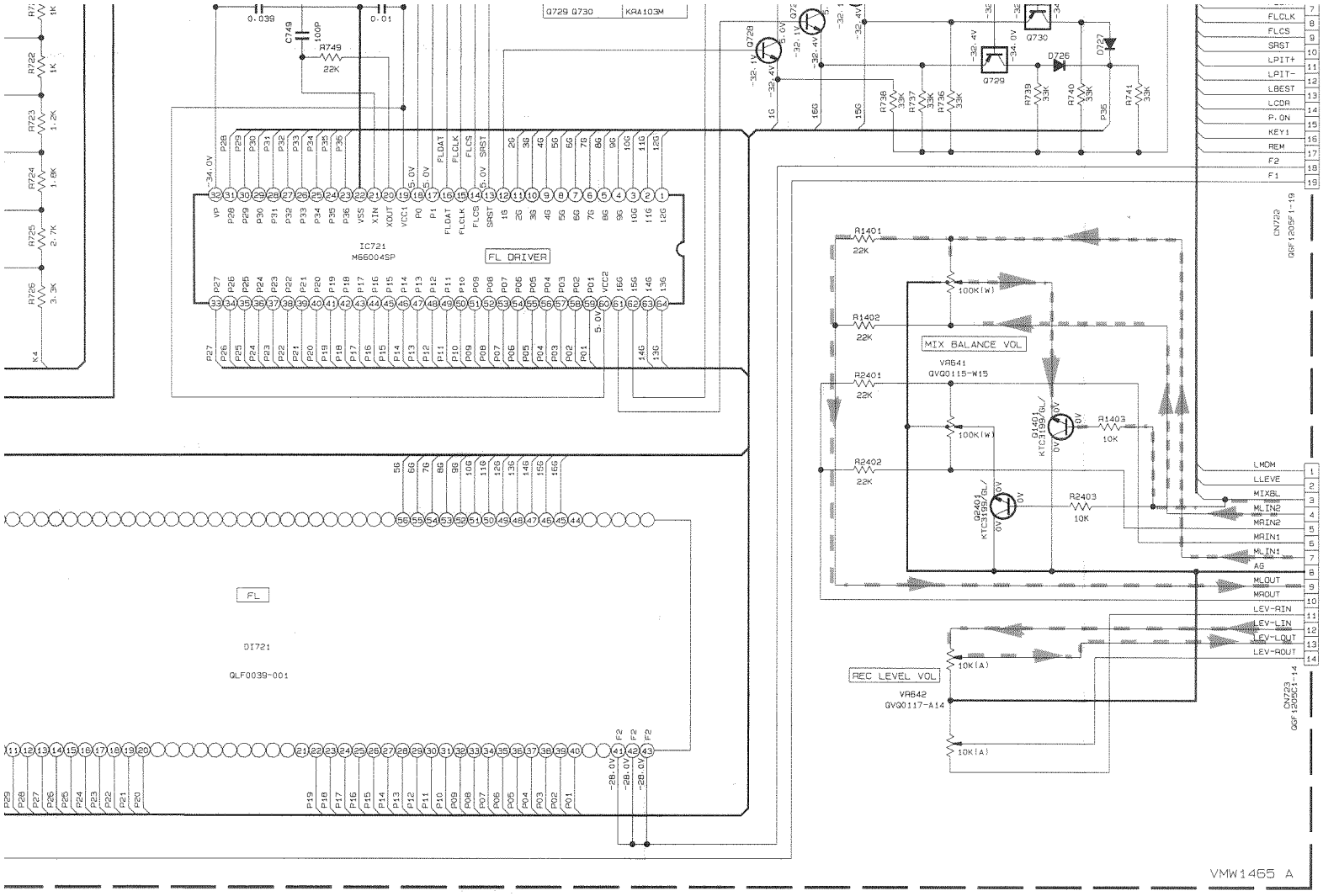


P4-4-c P4-4-d


TO CNB61(VDH2360-002AV)
CN724
GGF1205C1-07
MIC
AG
+10V
-10V
LOUT-L
AG
LOUT-R
MIC AMP
IC601
NJM4580L
R6101 680
R6102 680
C6102 47/16
C6101 0.1
R6006 10K
C6005 4.7/25
R6005 12K
C6003 330P
R6004 220
C6002 1/50
R6001 220
R6003 10K
C6001 0.0022
R6002 10K
C6103 0.1
R6103 680
R6104 680
C6104 47/16
HP AMP
IC621
BA15218N
C6202 100/16
C6201 0.1
R1201 10K
R1202 100K
R1204 5.6K
C1201 100P
R1205 68
R1206 82
C1202 0.01
C2201 100P
R2204 5.6K
R2202 100K
R2201 10K
R2205 68
R2206 82
C2202 0.01
C6203 0.1
C6204 100/16
C6008 0.01
C6009 0.01
C1203 0.01
C2203 0.01
C6209 0.01
MIC JACK
J6001
QNS0091-001
HP JACK
J6201
QNS0092-001
VMW1465 D
VMW1465 E
CN712
CN721
GGB2012J1-09
REM
5V
R727 330
R728 330
R729 330
R730 330
MD D721 SLR-326DC
CD D722 SLR-326MC
MIX BALANCE D723 SLR-326VC
REC LEVEL D724 SLR-326VC
Q723 KRC103M
3.6V
0V
LMDM
LCDM
MIXBL
LLEVE
PLAY S722 QSW0583-001Z
FWD S723 QSW0583-001Z
BWD S724 QSW0583-001Z
MD S725 QSW0583-001Z
CD S726 QSW0583-001Z
R722 1K
R723 1.2K
R724 1.8K
R725 2.7K
R726 3.3K
X4
-28.0V
F1
P36
P35
P34
P33
P32
P31
P30
P29
P28
P27
P26
P25

■ LCD Driver & Operation Switch Circuit





NOTES

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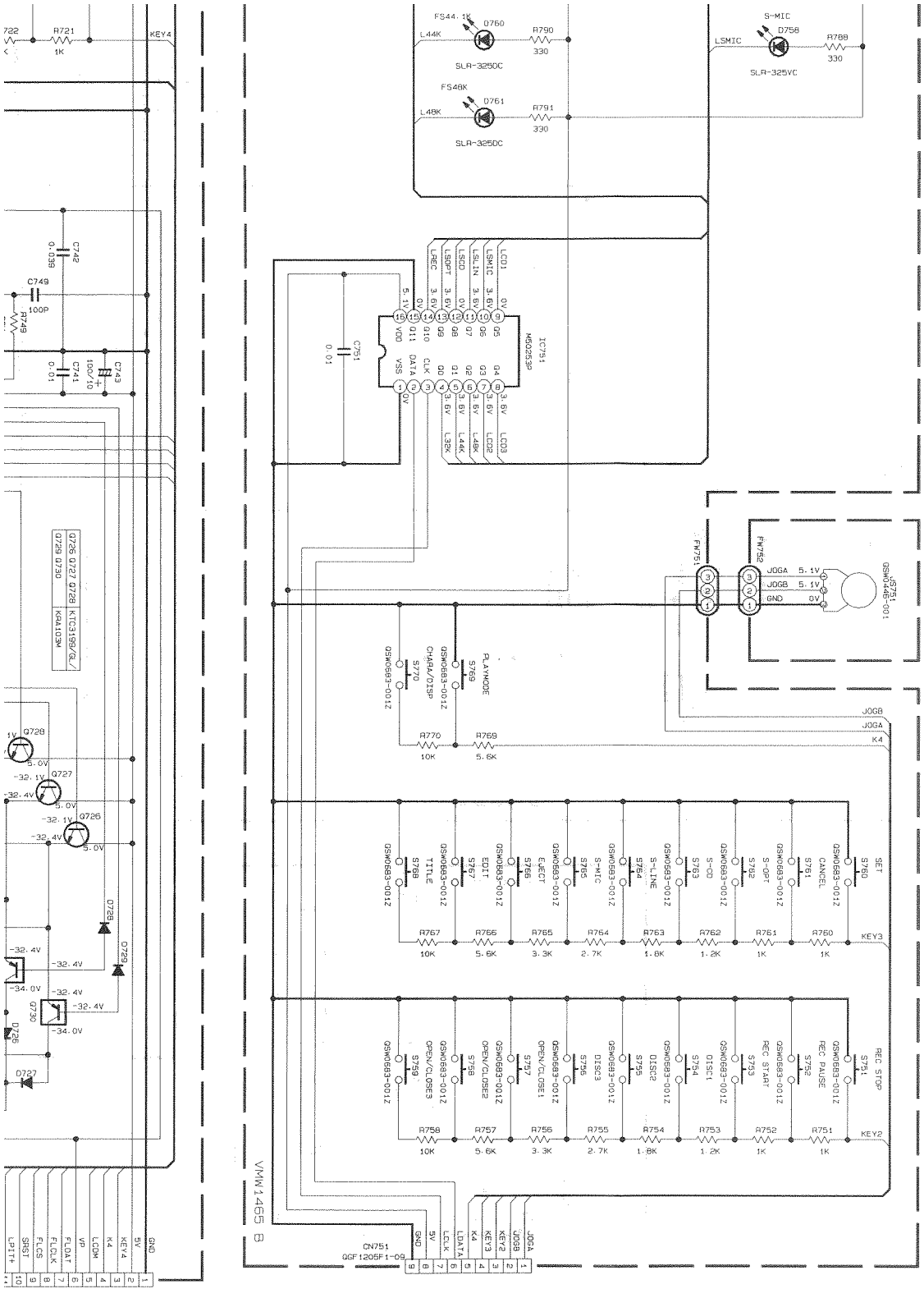
   ALL DIODES ARE 1SS133

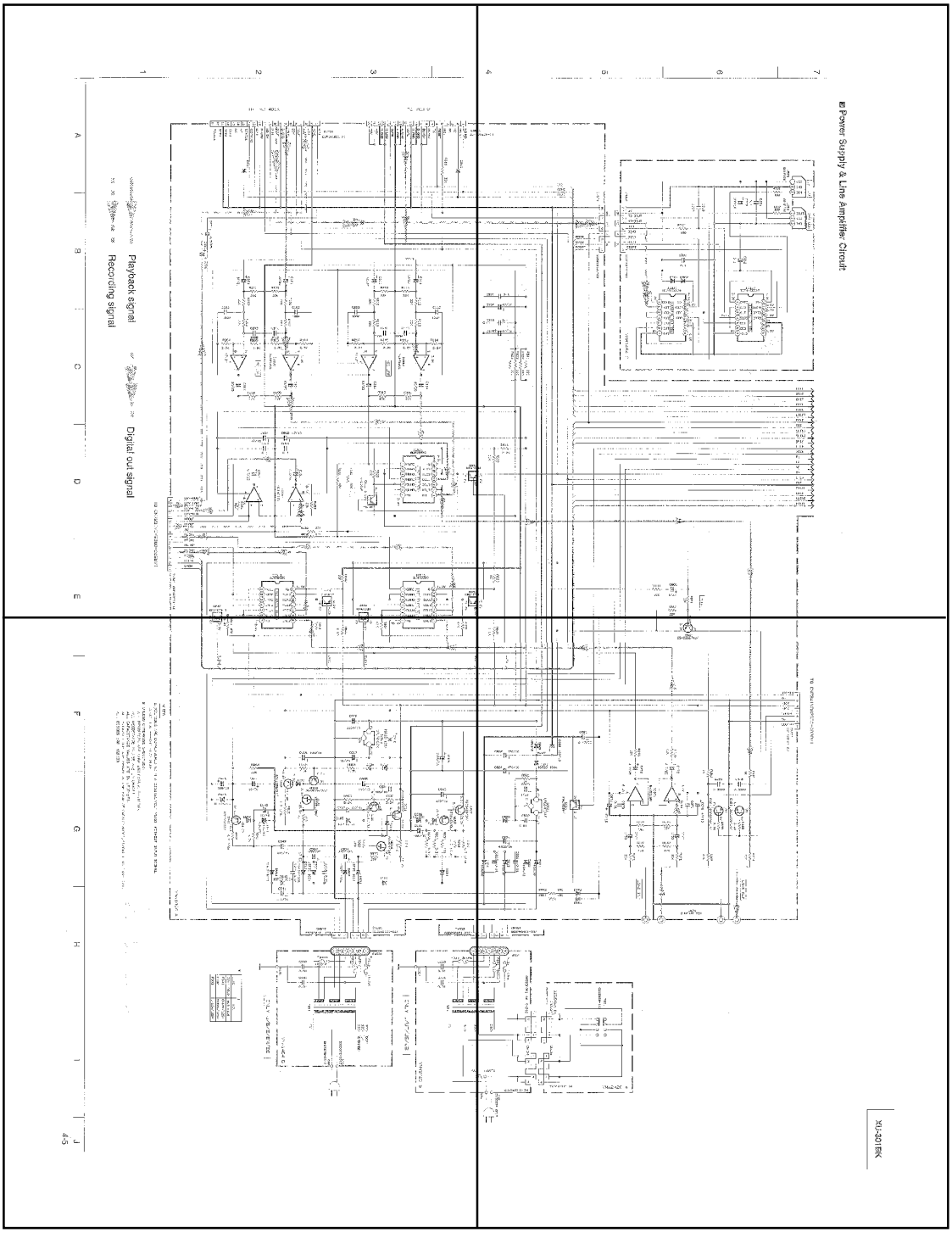
Playback signal

Recording signal

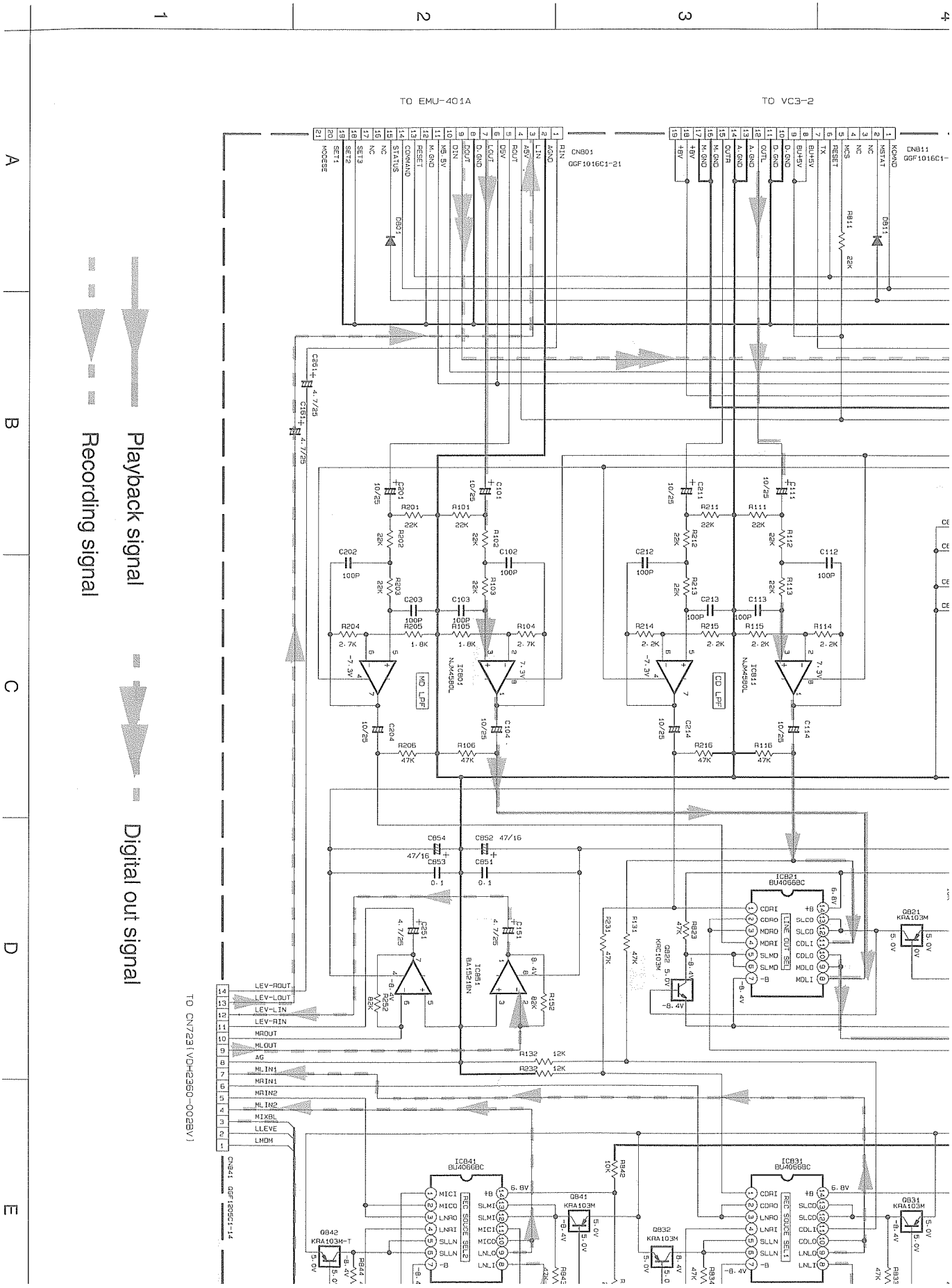
E F G H I J


R721
1K
KEY4
C742
0.039
C749
100P
R749
C741
0.01
C743
100/10
Q728
Q727
Q726
D728
D729
Q730
D726
D727
GND
5V
KEY4
K4
LCOM
FLDAT
VP
FLCLK
FLCS
SRST
LPIT+
FS44.1K
L44K
D760
R790
330
SLA-3250C
FS48K
L48K
D761
R791
330
SLA-3250C
S-MIC
LSMIC
D758
R788
330
SLA-325VC
IC751
M50263P
C751
0.01
LREC
LSGPT
LSCD
LSLIN
LSMIC
LCD1
LCD2
LCD3
L32K
L44K
L48K
VDD
VSS
CLK
DATA
FM751
FM752
JOGA 5.1V
JOGB 5.1V
GND 0V
QSW0449-001
JOGB
JOGA
K4
QSW0683-001Z
CHARA/DISP
S770
PLAYMODE
S769
R770
10K
R769
5.6K
TITLE
EDIT
EJECT
S-MIC
S-LINE
S-CD
S-OPT
CANCEL
SET
S760
R767
10K
R766
5.6K
R765
3.3K
R764
2.7K
R763
1.8K
R762
1.2K
R761
1K
R760
1K
KEY3
OPEN/CLOSE3
OPEN/CLOSE2
OPEN/CLOSE1
DISC3
DISC2
DISC1
REC START
REC PAUSE
REC STOP
S758
S757
S756
S755
S754
S753
S752
S751
R758
10K
R757
5.6K
R756
3.3K
R755
2.7K
R754
1.8K
R753
1.2K
R752
1K
R751
1K
KEY2
VMW1465 B
CN751
GGF1205F1-09
GND
5V
LCLK
LDATA
K4
KEY3
KEY2
JOGB
JOGA
TO CN502(VDH2360-002CV)
(VDH2360-002CV)

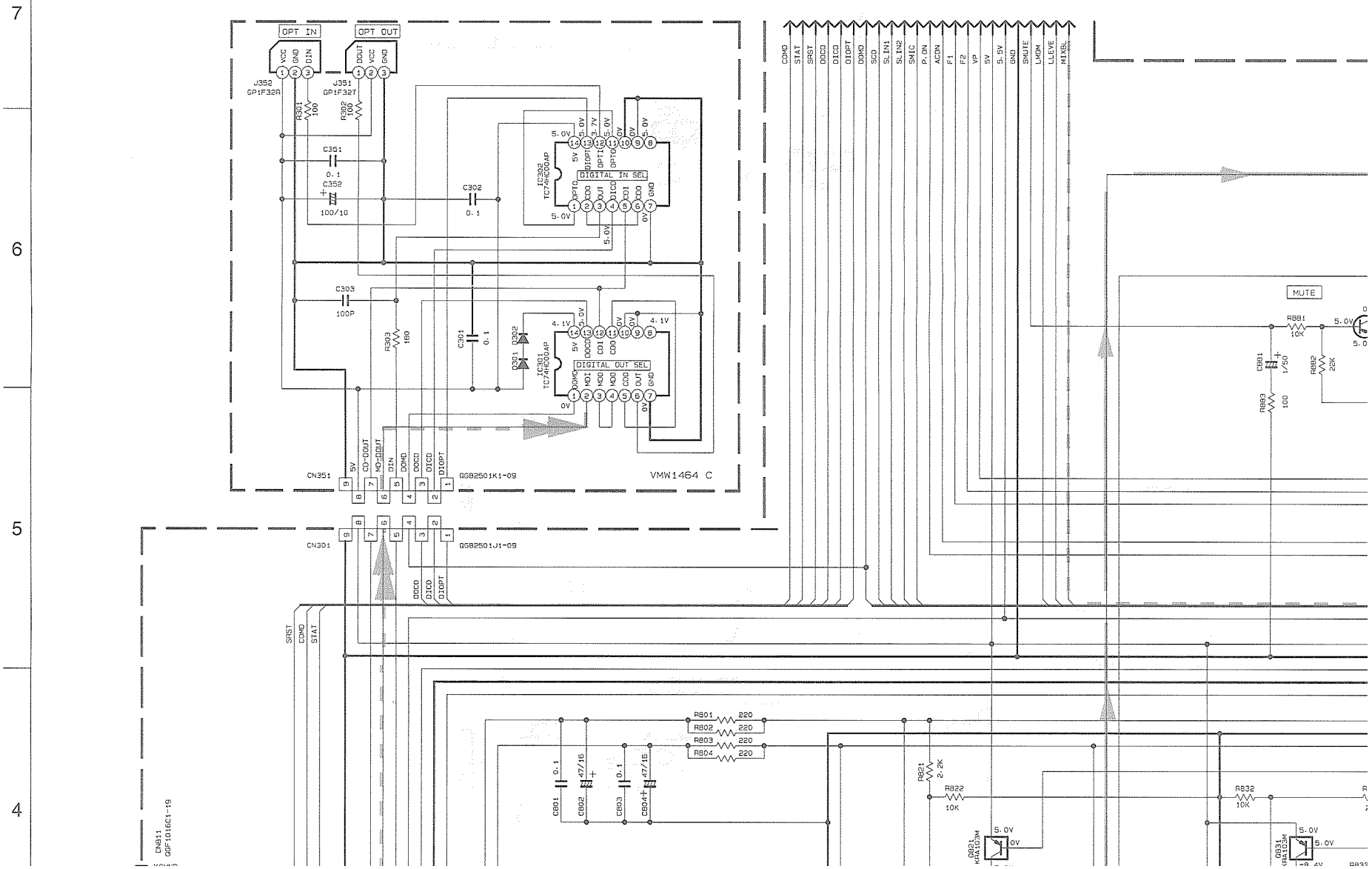
P4-5-a P4-5-b

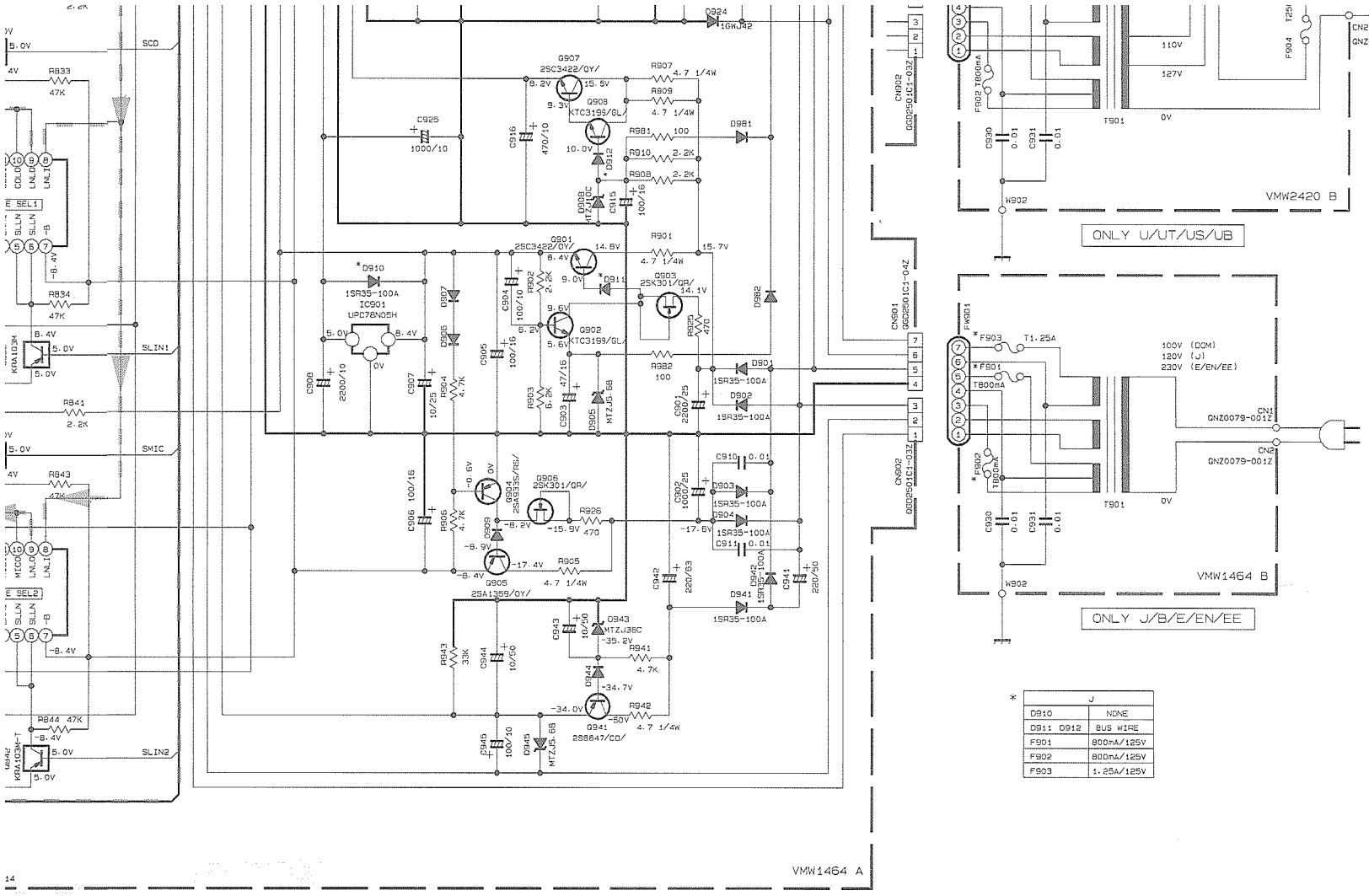


P4-5-c P4-5-d


Playback signal
Recording signal
Digital out signal
TO EMU-401A
TO VC3-2
TO CN723(VDH2350-002BV)
MD LPF
CD LPF
LINE OUT SEL
REC SOURCE SEL1
REC SOURCE SEL2

Power Supply & Line Amplifier Circuit





NOTES

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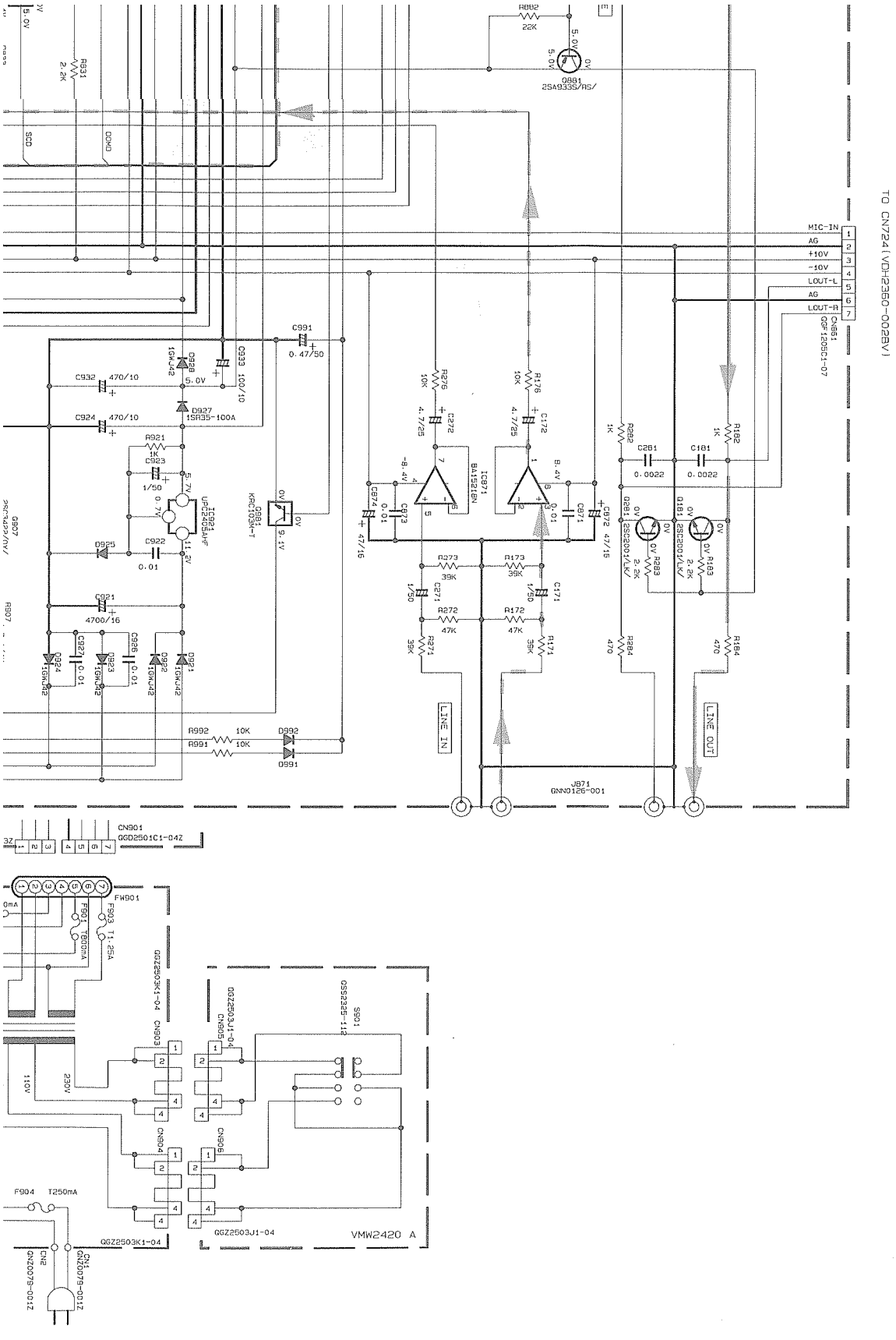
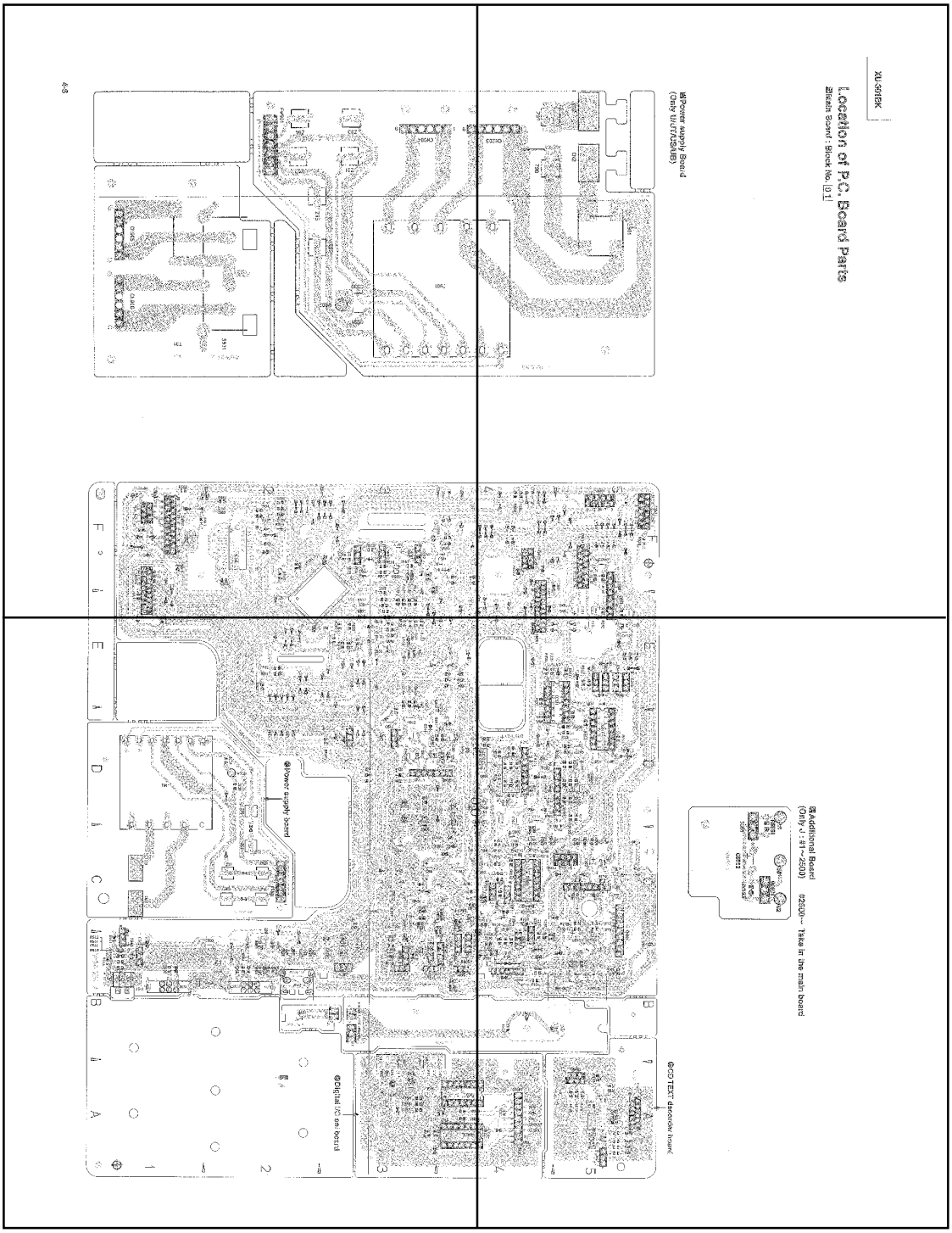
   ALL DIODES ARE 1SS133


TO CN724(VDH2360-002BV)
MIC-IN
AG
+10V
-10V
LOUT-L
AG
LOUT-R
CN851
QGF1205C1-07
LINE IN
LINE OUT
J871
GNN0126-001
CN901
QGD2501C1-04Z
FW901
F901 T800mA
F903 T1.25A
F904 T250mA
110V
230V
CN903
CN904
CN905
CN906
QGZ2503K1-04
QGZ2503J1-04
QSS2335-112
S901
VMW2420 A
CN2
CN1
GNZ0079-001Z

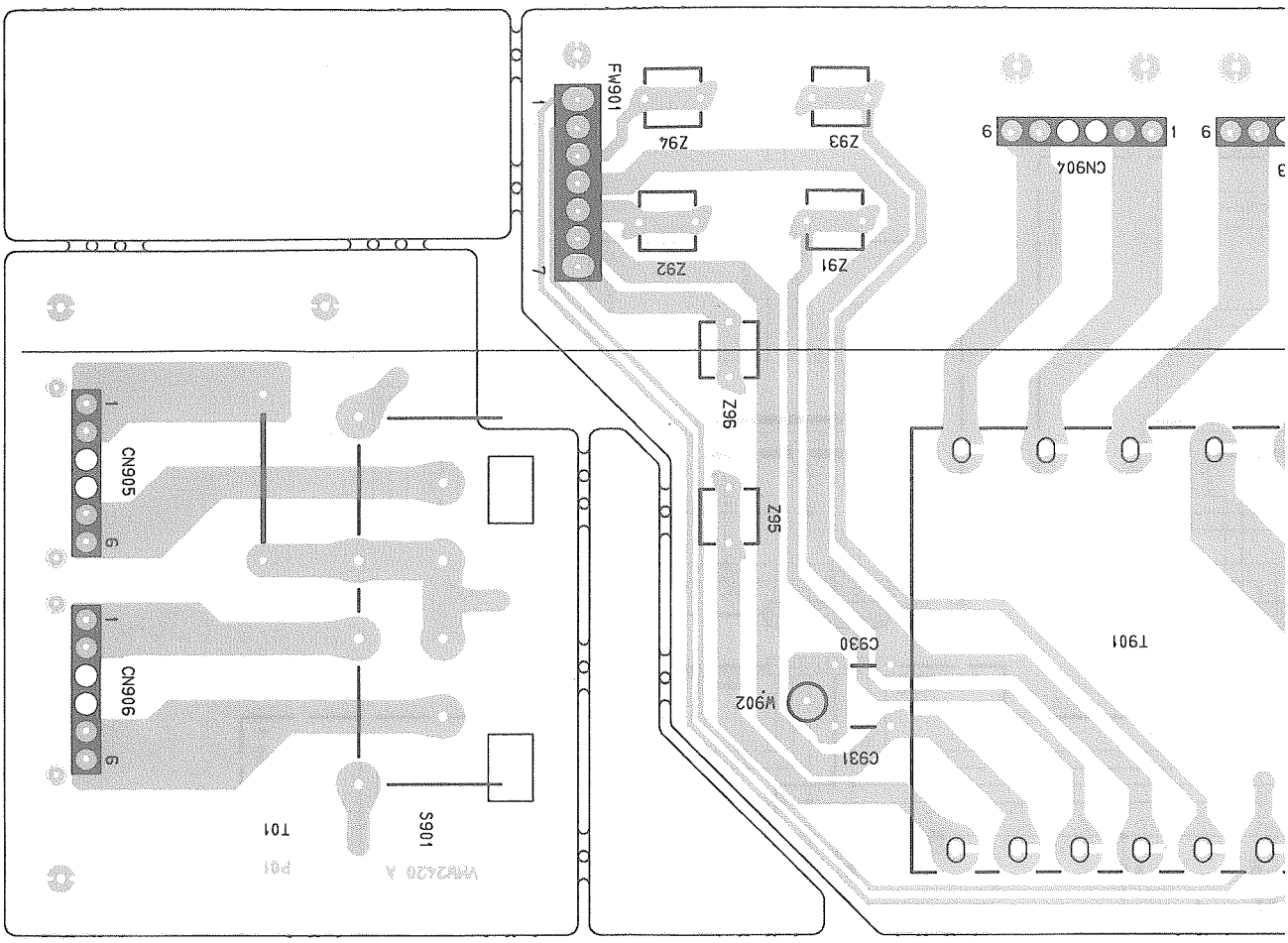
P4-6-a

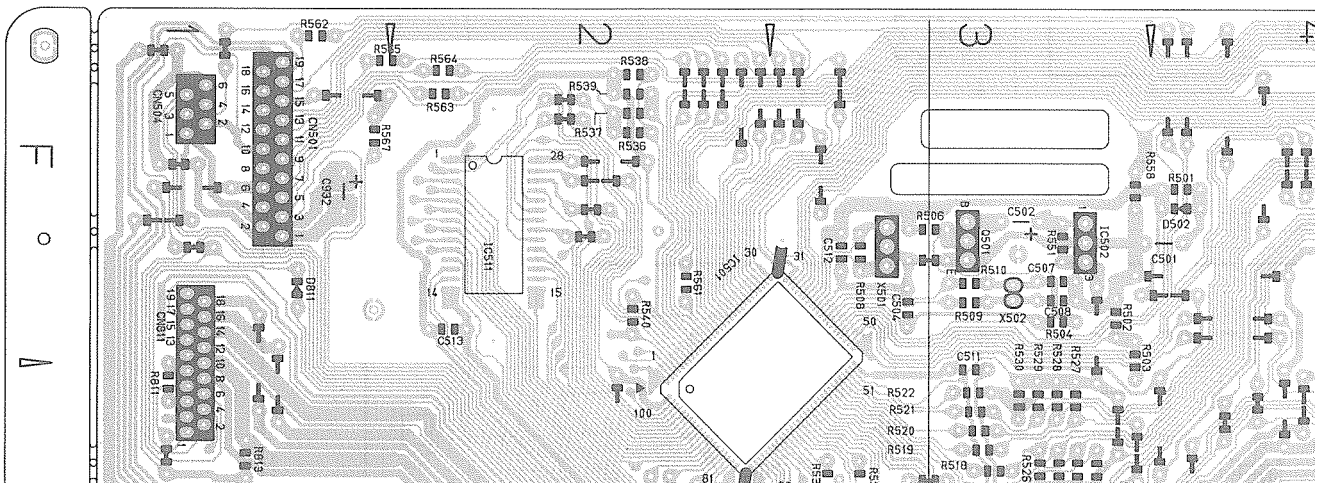
P4-6-b



P4-6-c

P4-6-d

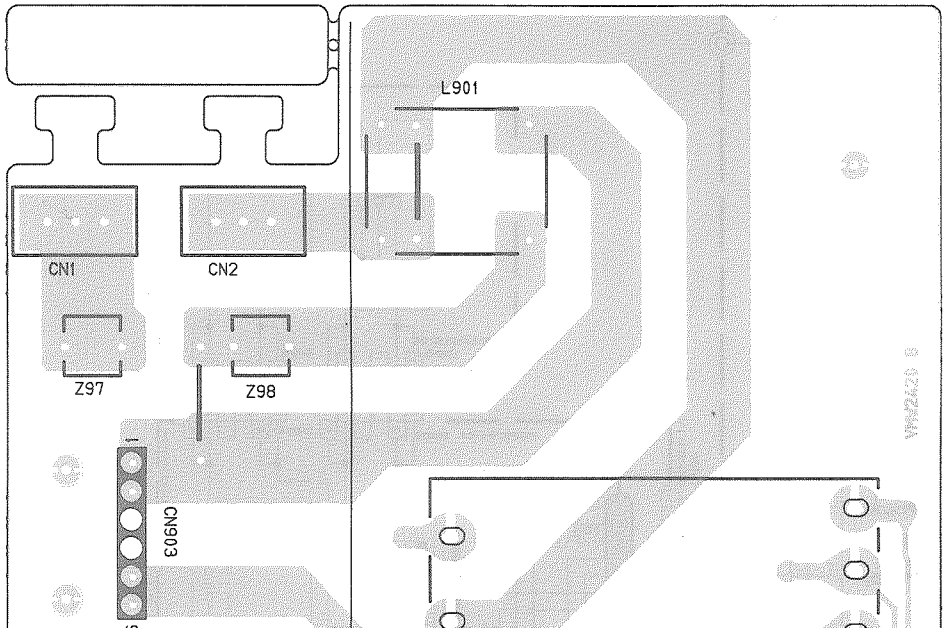

FW901
Z94
Z93
Z92
Z91
Z96
Z95
CN904
CN905
CN906
C930
C931
W902
T901
T01
S901

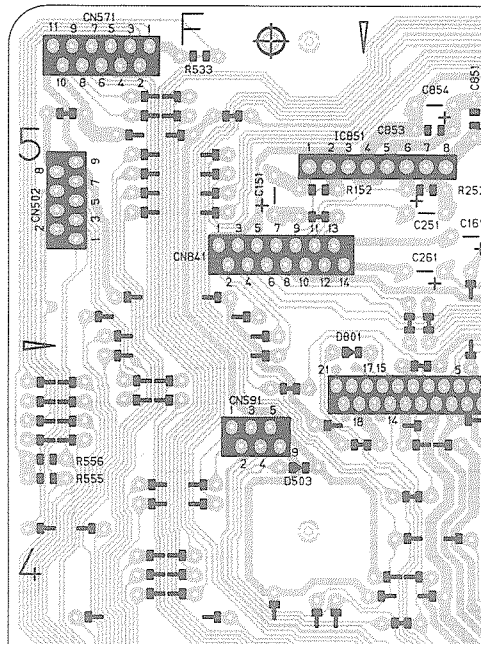

F
o
A
R562
R565
R564
R563
R538
R539
R537
R536
R567
C532
CN564
CN560
IC511
C513
DB11
CN811
RB11
R569
R540
IC501
C512
R506
C502
R501
R508
C504
R510
C507
C508
R509
X502
R504
IC502
R502
R503
R528
R527
R530
C511
R522
R521
R520
R519
R518
R526
R558
R501
D502
C501

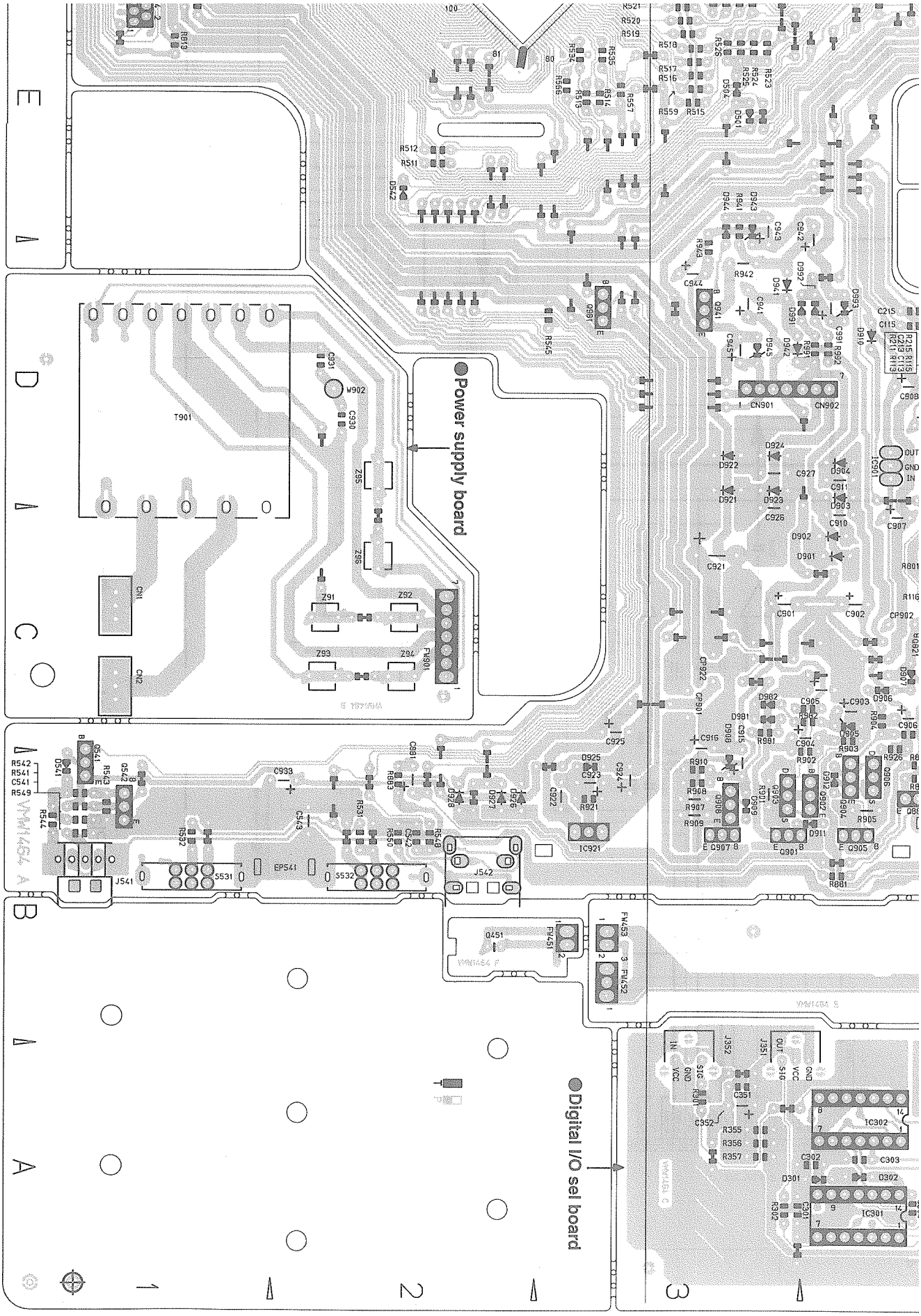
Location of P.C. Board Parts

■ Main Board : Block No. 01

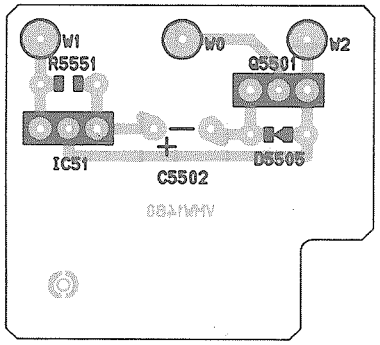
■ Power supply Board
(Only U/UT/US/UB)



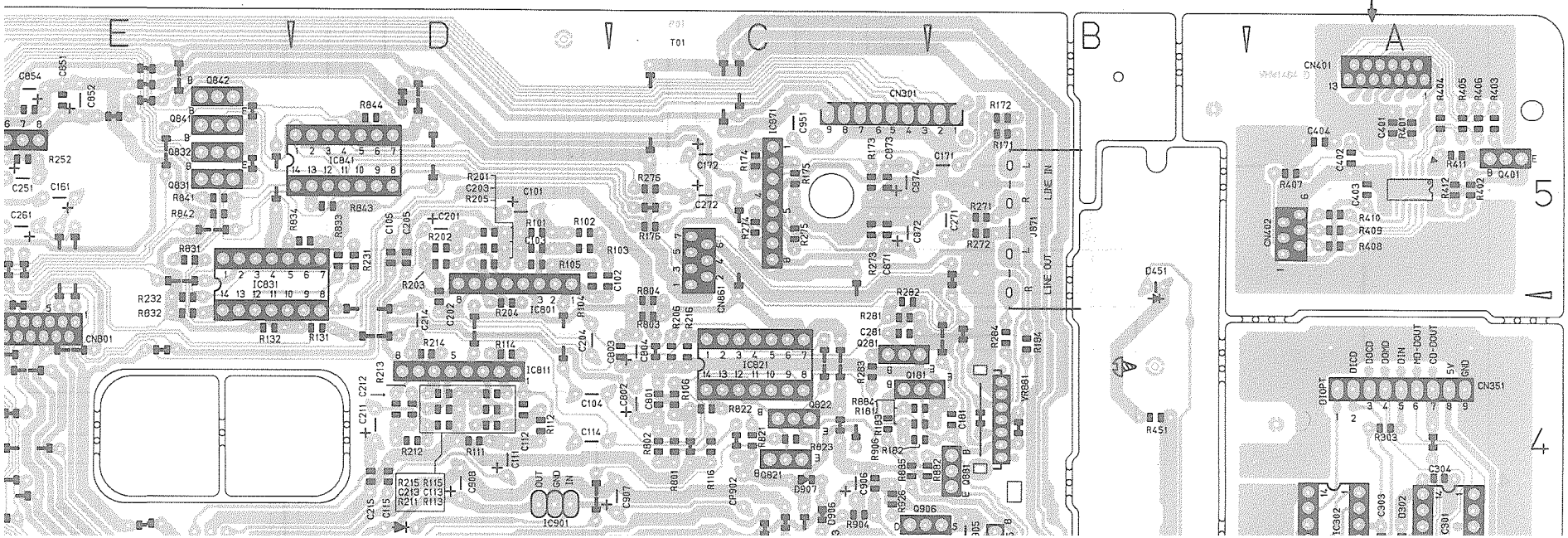



Power supply board
Digital I/O sel board

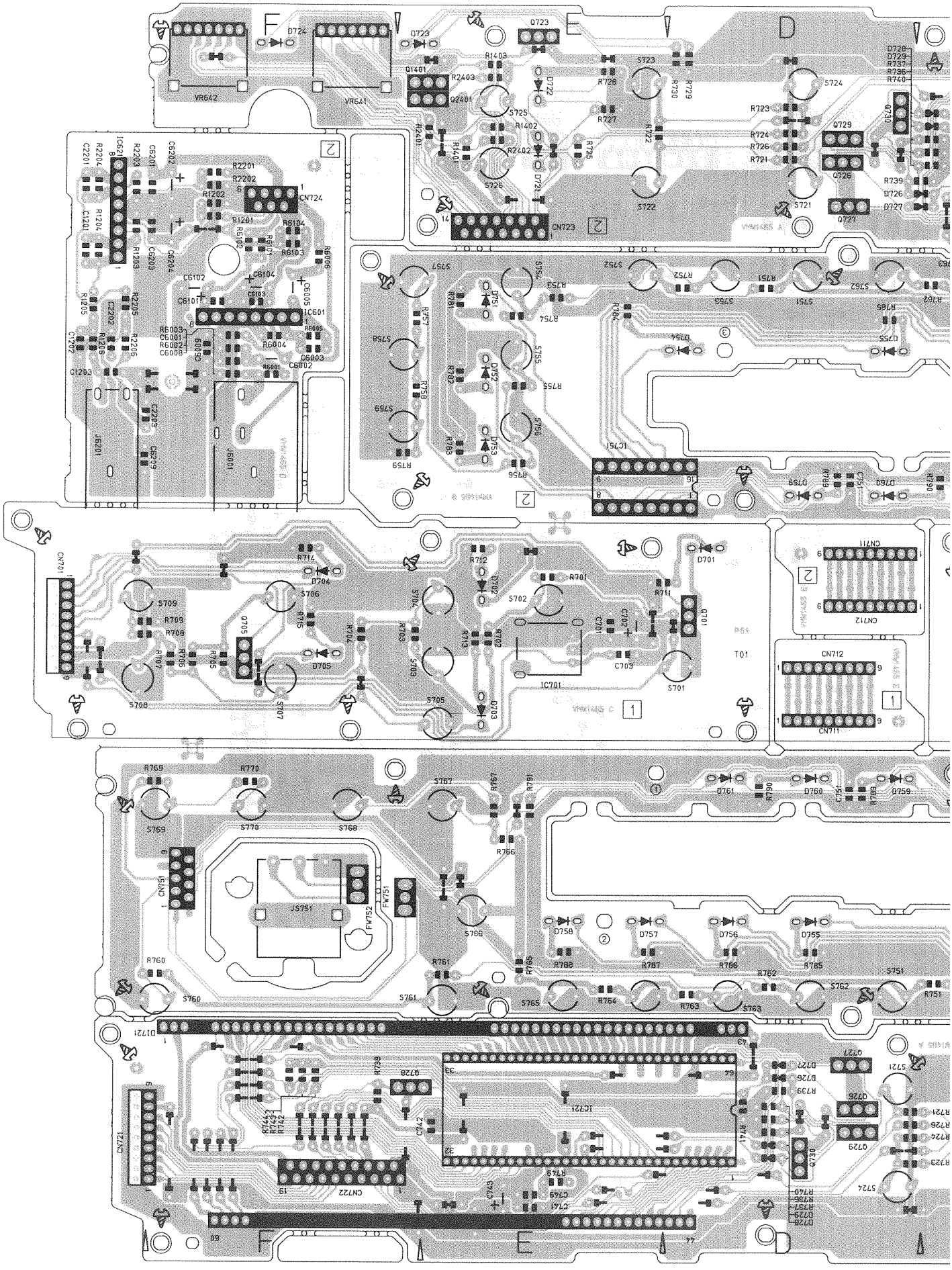
■Additional Board
(Only J : #1～2500)　　#2500～ Take in the main board

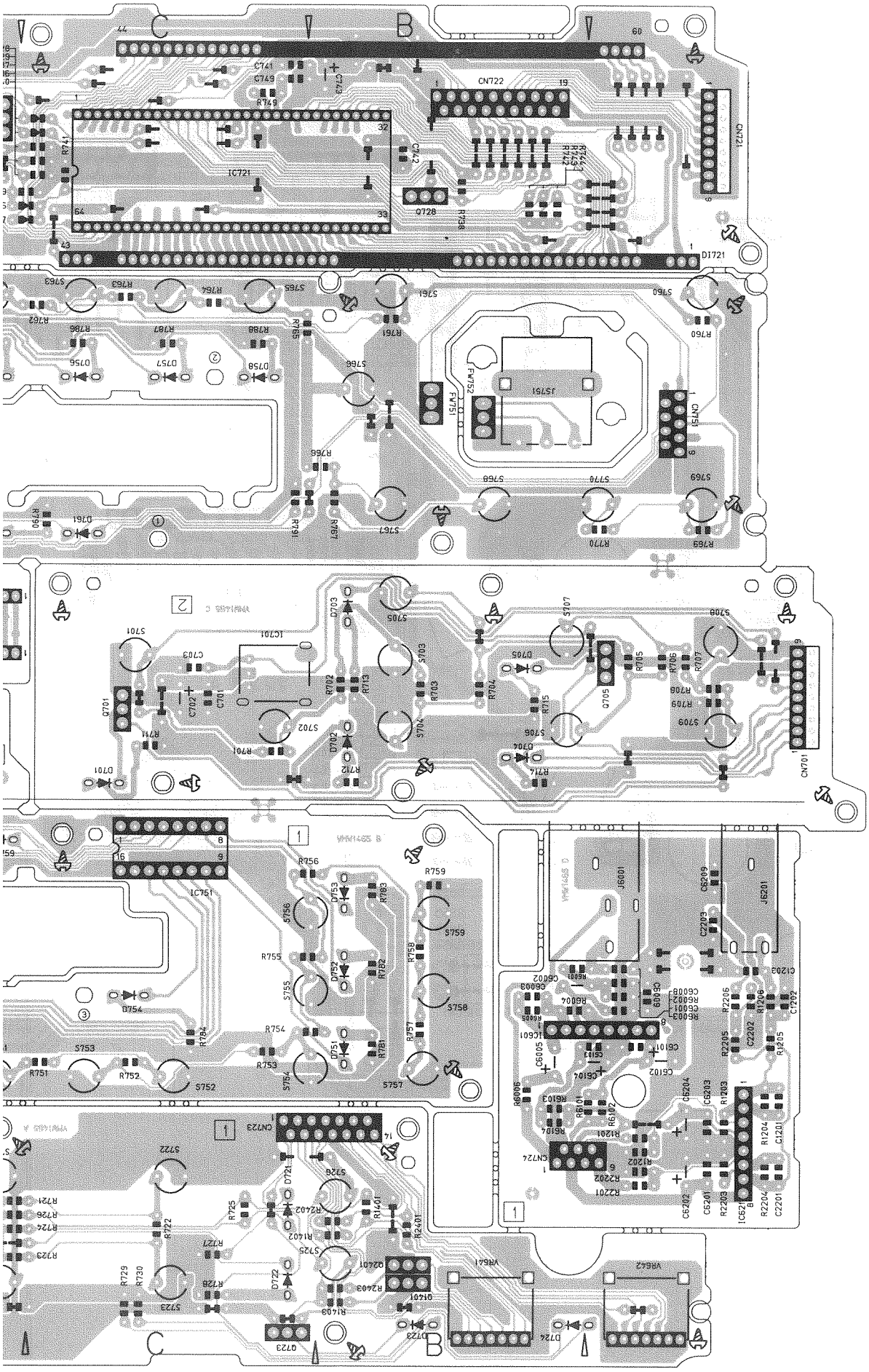


●CD TEXT decorder board

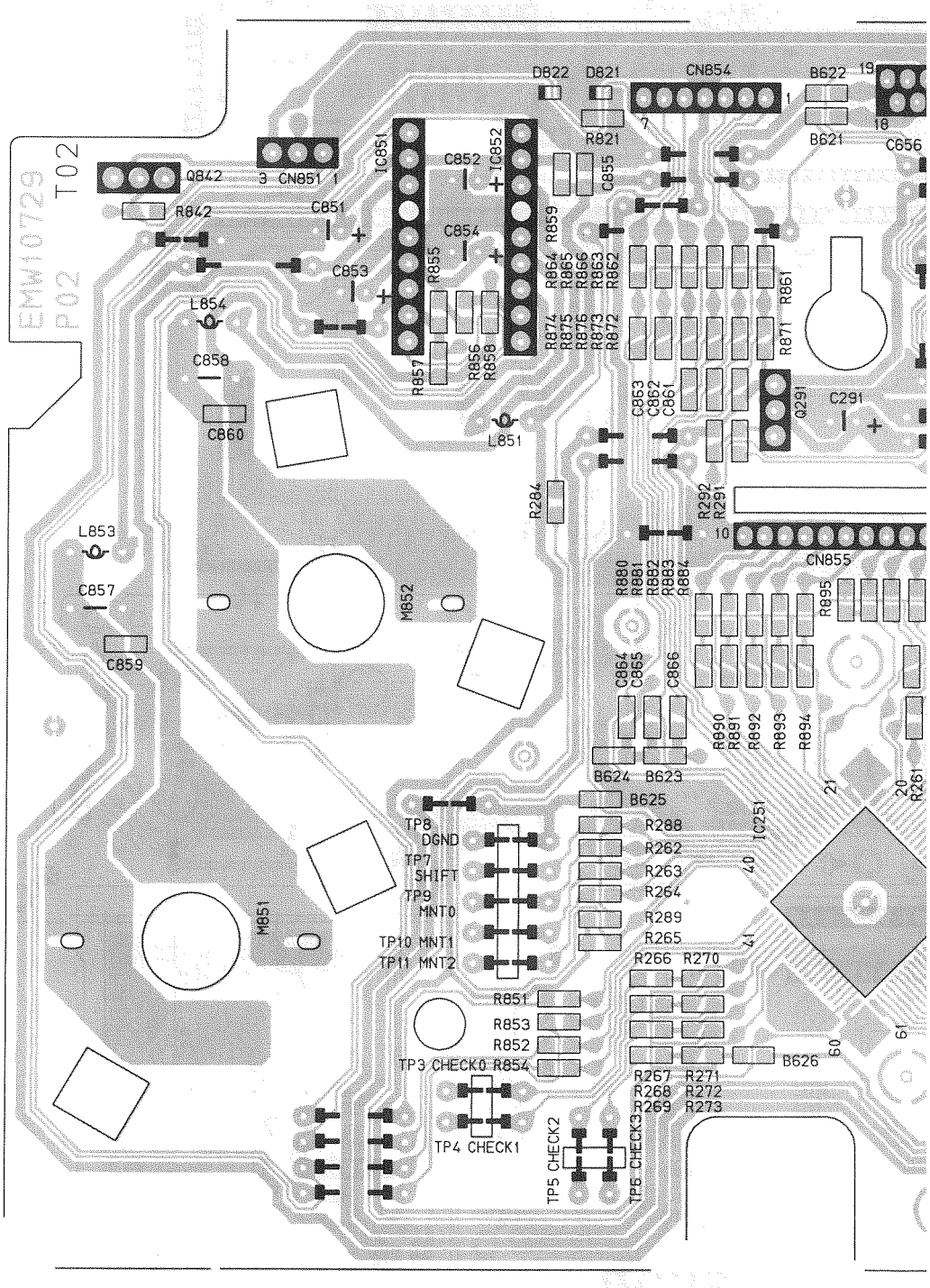


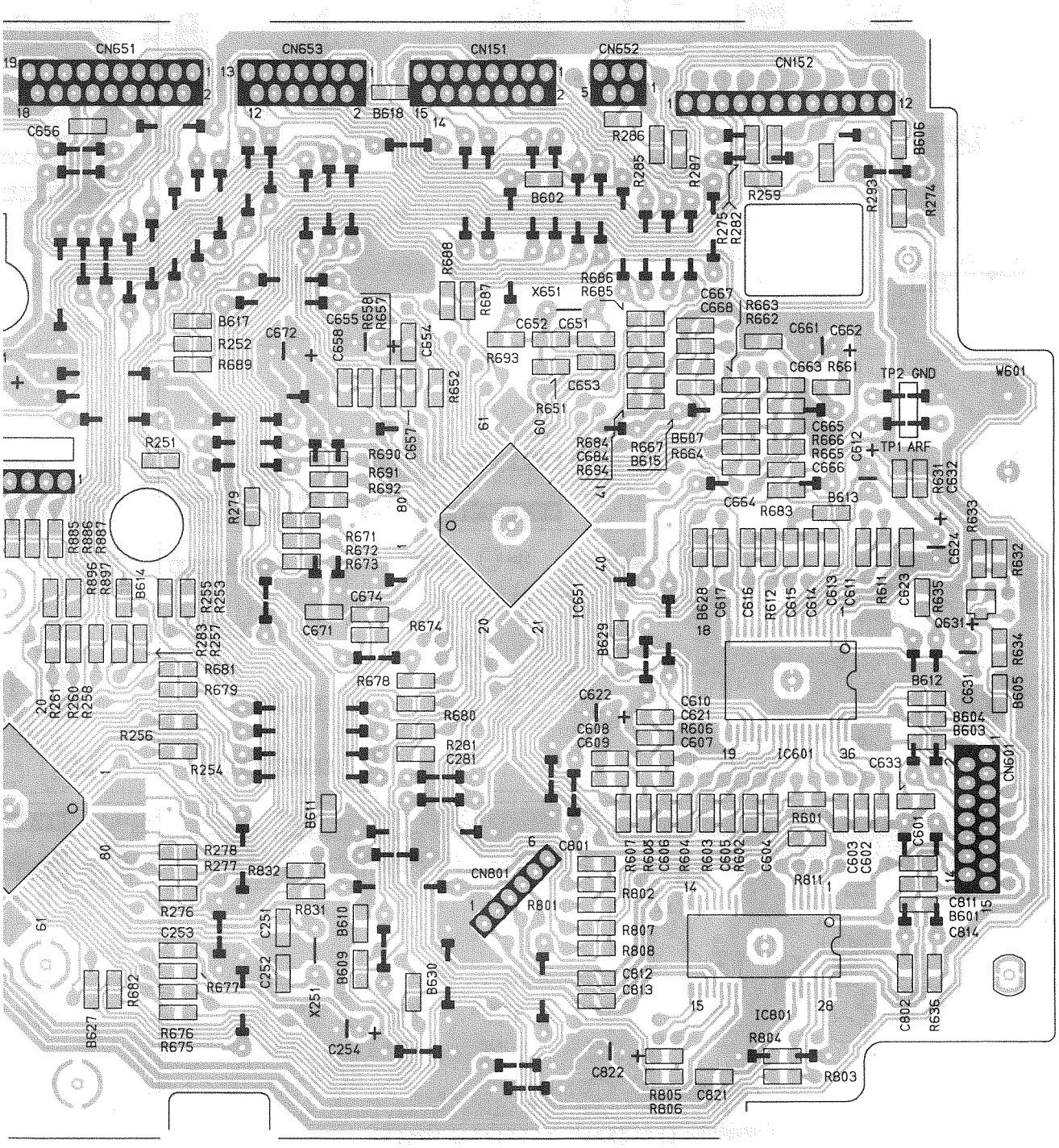
■Front Board : Block No. 02





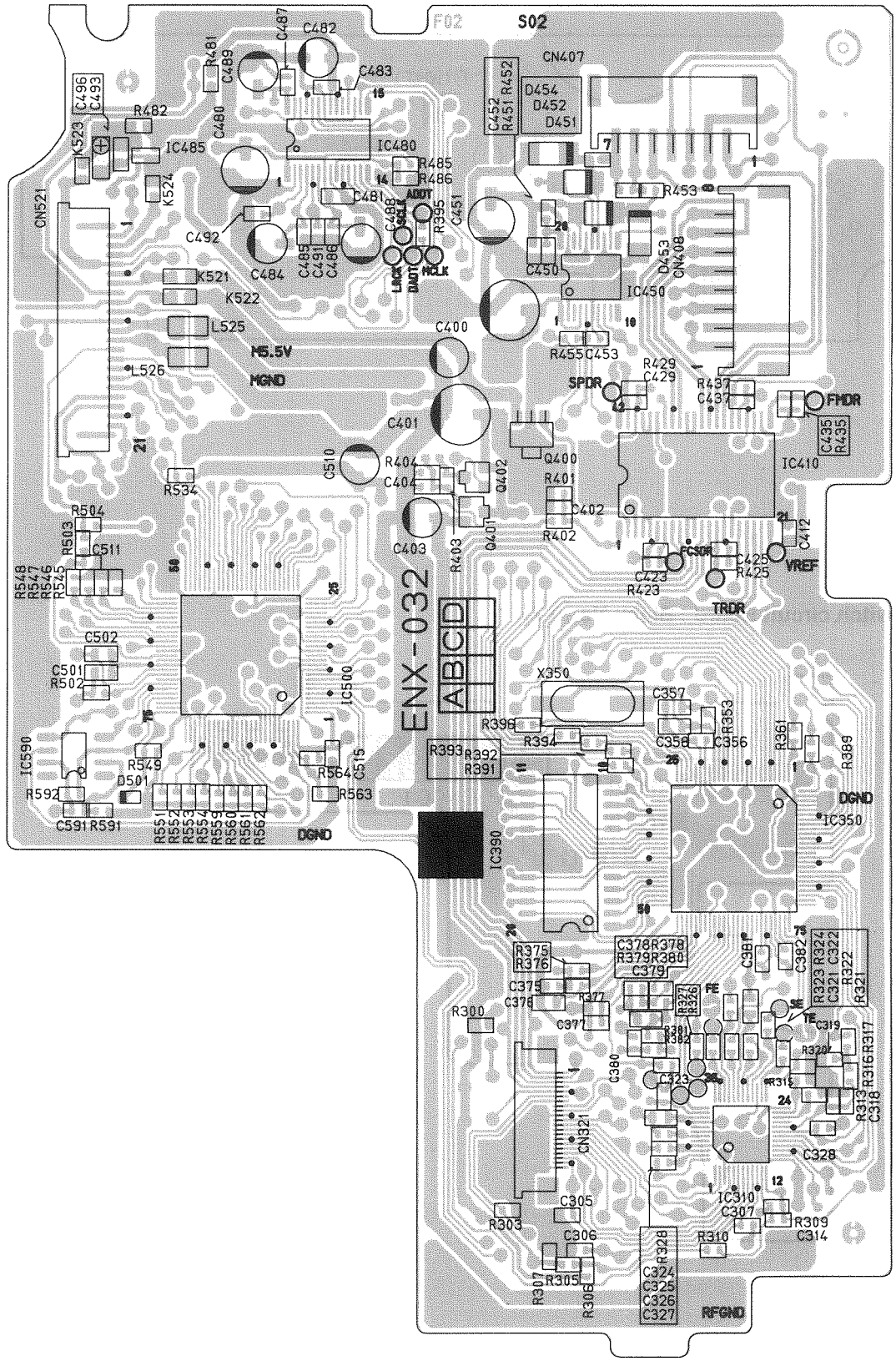
■CD Servo & Mechanism Control Board (VC3-2) : Block No. 03



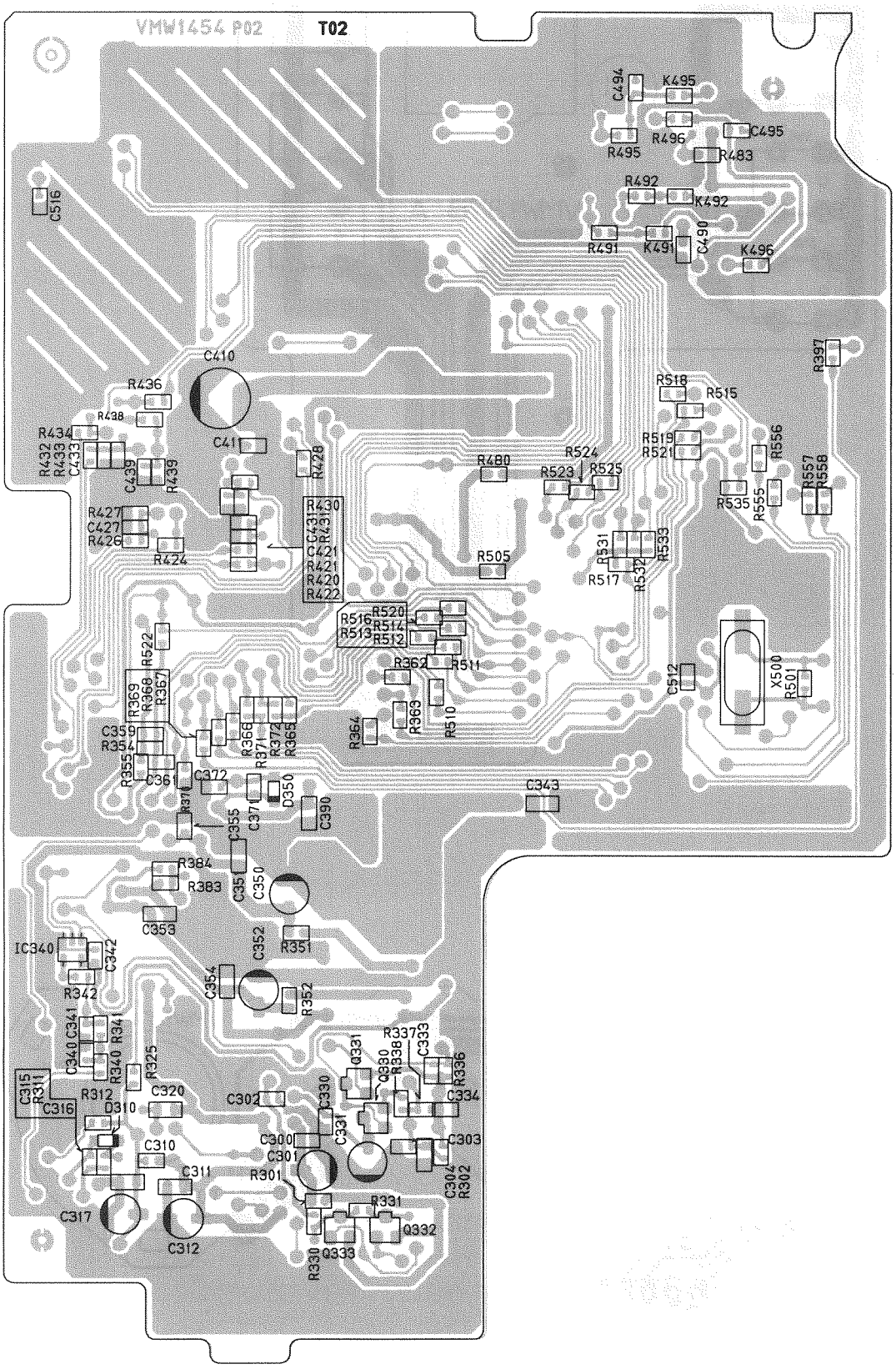

CN651
CN653
CN151
CN552
CN152
CN601
CN801
IC601
IC801
IC651
X651
X251
Q631
W601
TP2 GND
TP1 ARF

■MD Servo & Mechanism Control Board(EMU-401A) : Block No. 05

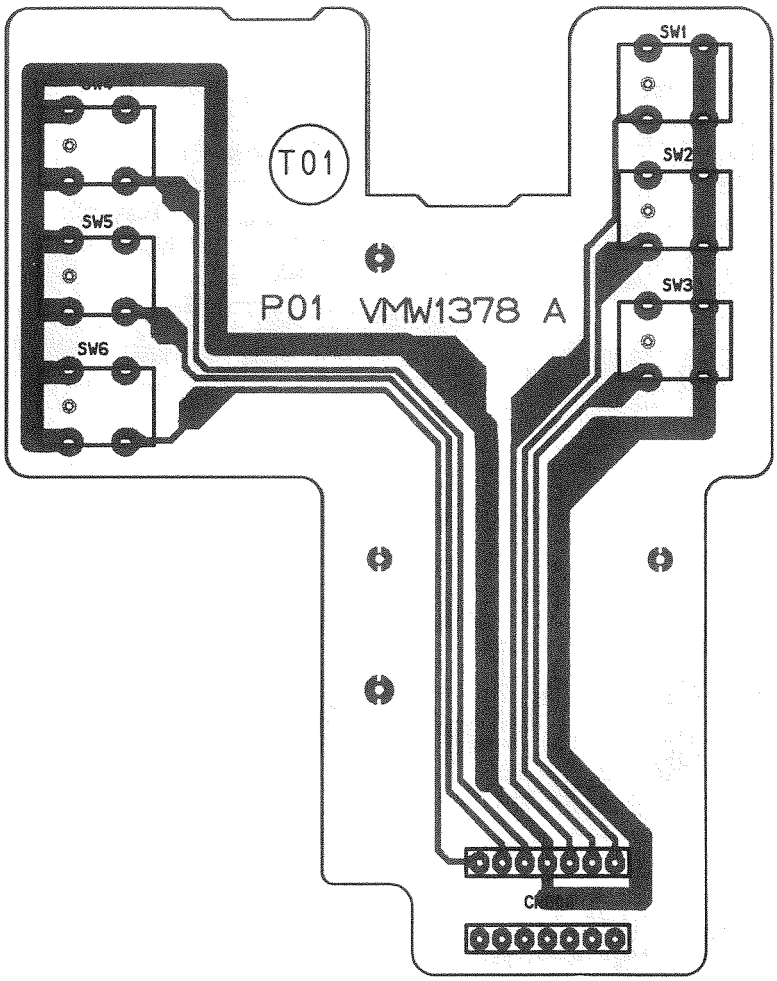
(Parts side)



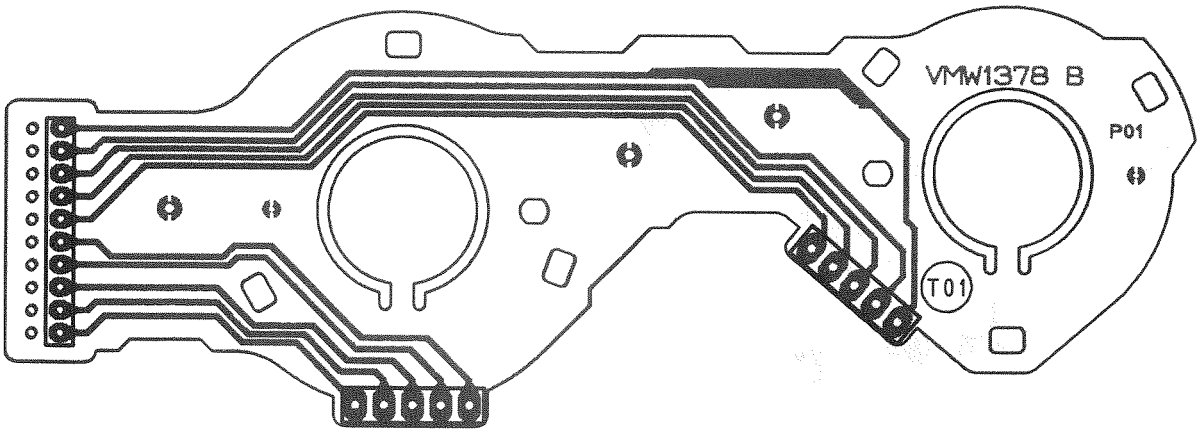
(Chip parts side)



■CD Tray Select Board : Block No. 04

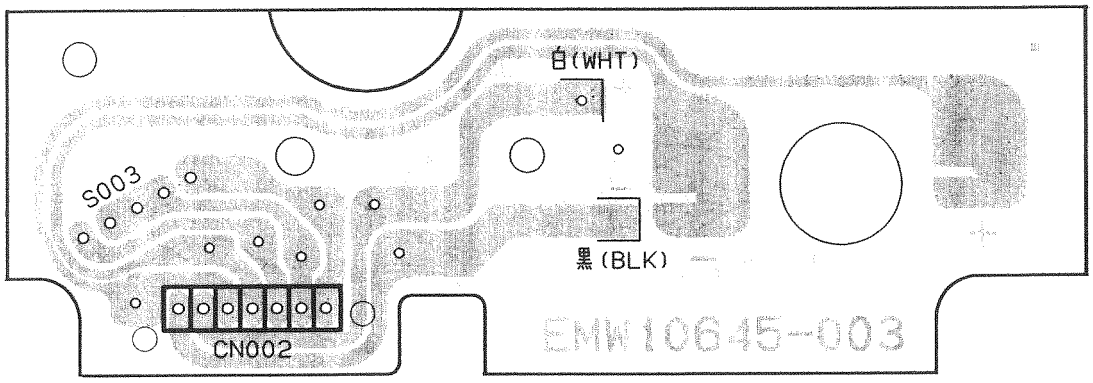


■Cam Switch Board

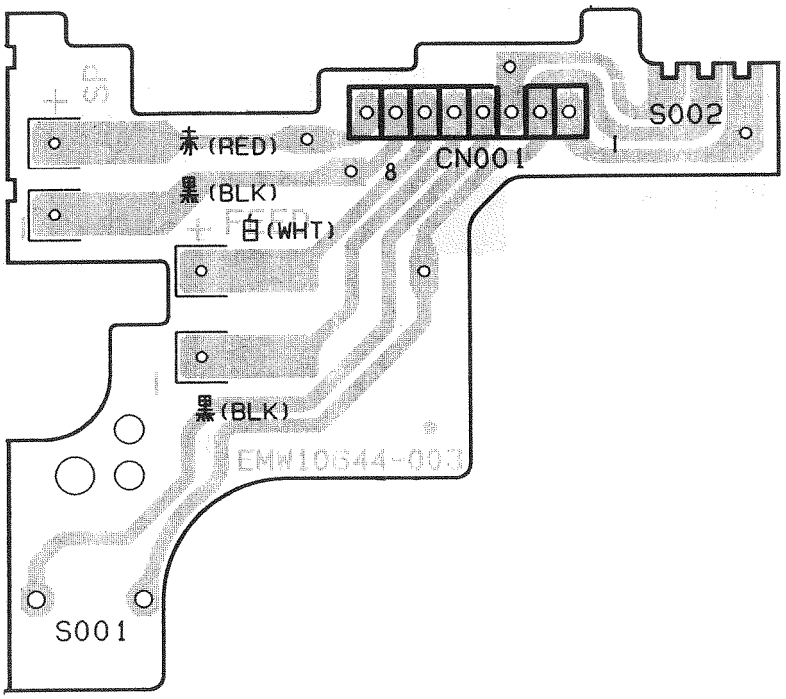


■MD Mechanism Board

●Loading circuit Board : Block No. 06



●Switch circuit Board : Block No. 07



PARTS LIST

[XU-301BK]

* All printed circuit boards and its assemblies are not available as service parts.

Area Suffix

B ---------- U.K.
E ------ Continental Europe
J ---------- U.S.A.
EE --------- Eastern Europe
EN -------- Northern Europe
US ---------- Singapore
UT ---------- Taiwan
UB ---------- Hong Kong
U ---------- Other Areas

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Exploded View of General Assembly and Parts List ---------- 5-4
Exploded View of CD Mechanism and Parts List ---------- 5-7
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Electrical Parts List ---------- 5-10
Packing Materials and Accessories List ---------- 5-22

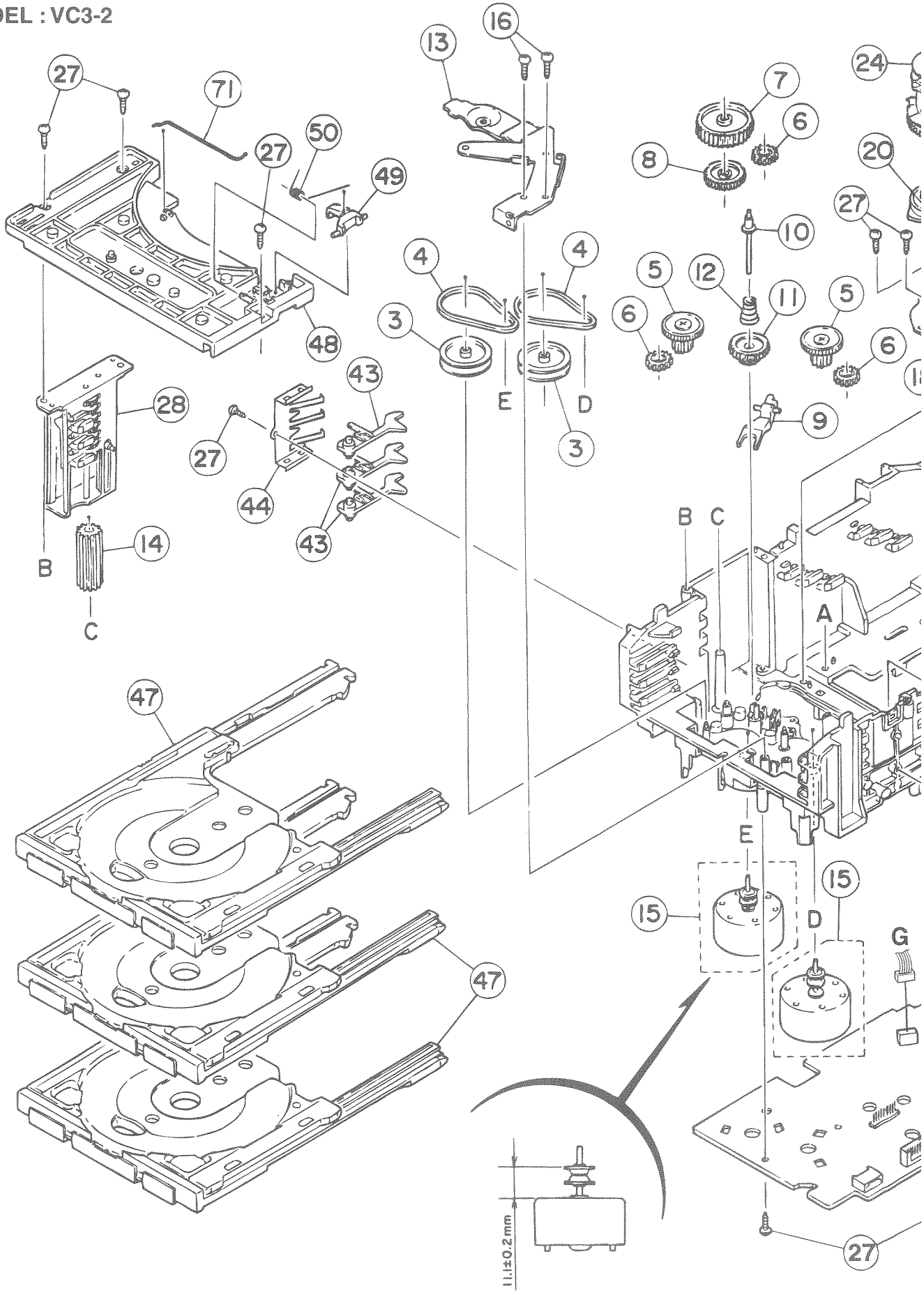
■CD Changer Mechanism (VC3) Parts List

BLOCK NO. M2MM

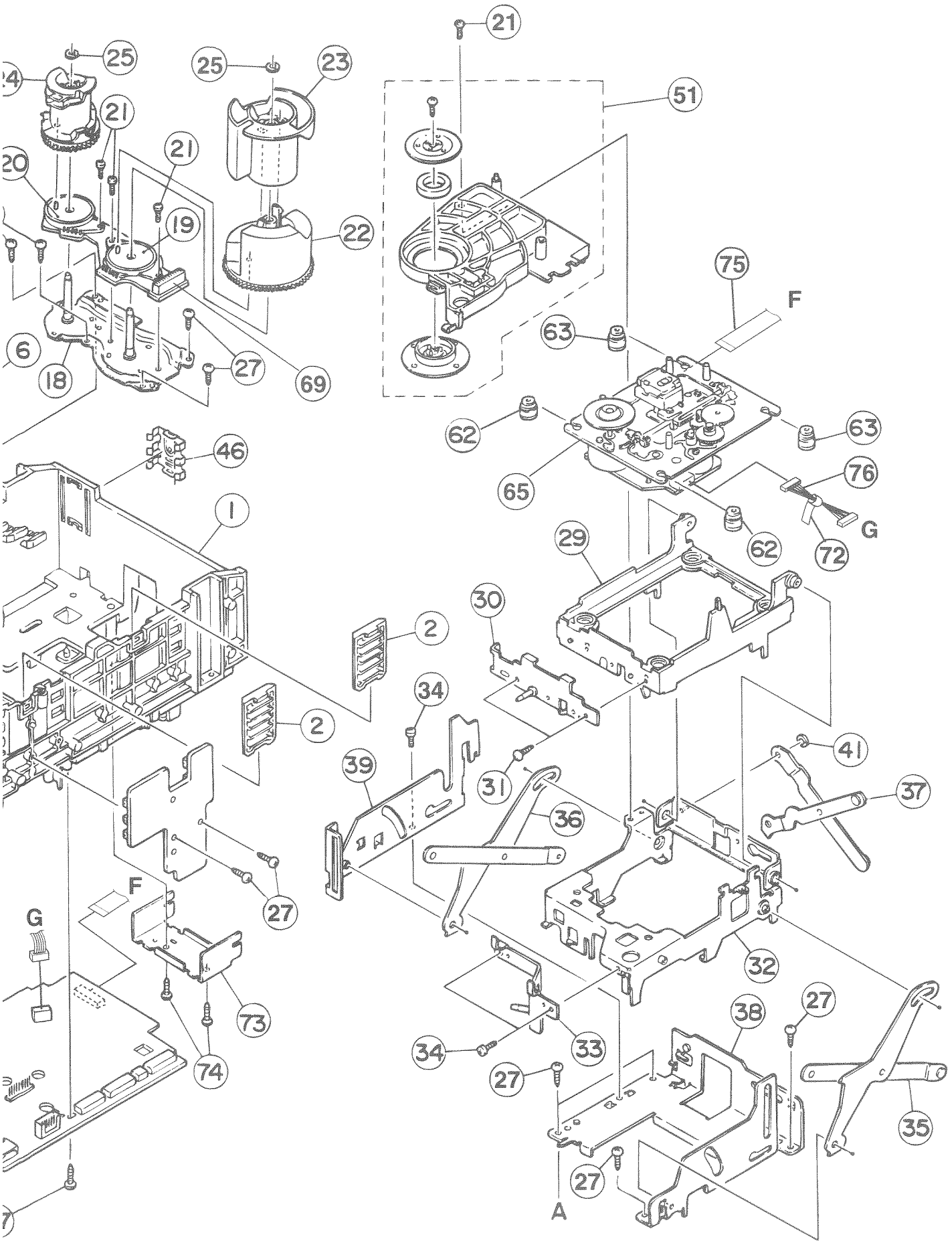
⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	VKS1144-003	CHASSIS		1		
	2	VKS3698-003	TRAY GUIDE		2		
	3	VKS5532-003	PULLEY GEAR		2		
	4	VKB3000-164	BELT		2		
	5	VKS5505-003	GEAR B		2		
	6	VKS5506-002	GEAR C		3		
	7	VKS5507-002	CROSS GEAR U		1		
	8	VKS5508-002	CROSS GEAR L		1		
	9	VKS5510-003	SELECT LEVER		1		
	10	VKH5769-001	S.G.SHAFT		1		
	11	VKS5511-002	SELECT GEAR		1		
	12	VKW5155-003	COMP.SPRING	FOR SELECT GEAR	1		
	13	VKM3846-002	GEAR BRACKET		1		
	14	VKS5509-002MM	CYLINDER GEAR		1		
	15	MSN5D257A-SA2	D.C.MOTOR ASSY		2		
	16	DPSP2616Z	SCREW	FOR MOTOR	2		
	18	VKM3825-00AMM	C.G.BASE ASS'Y		1		
	19	VKZ3172-00A	CAM SW. R ASS'Y		1		
	20	VKZ3173-00A	CAM SW. L ASS'Y		1		
	21	SPST2606Z	SCREW		4		
	22	VKS2263-002MM	CAM R1		1		
	23	VKS2264-002MM	CAM R2		1		
	24	VKS2265-002MM	CAM GEAR L		1		
	25	WDL316050	SLIT WASHER		2		
	27	SBSF2608Z	T.SCREW		16		
	28	VKS3702-00FMM	DRIVE UNIT		1		
	29	VKS2247-004	MECHA HOLDER A		1		
	30	VKL7767-00B	BRACKET ASS'Y		1		
	31	SBSF2606Z	SCREW	FOR BRACKET	2		
	32	VKM3860-00A	M.HOLDER B AS'Y		1		
	33	VKL7802-00C	M.HOLDER C AS'Y		1		
	34	SDST2604Z	SCREW		3		
	35	VKL7810-00A	LIFTER ASS'Y R		1		
	36	VKL7811-00A	LIFTER ASS'Y L		1		
	37	VKL7812-00A	LIFTER ASS'Y H		1		
	38	VKL2732-002	LIFTER BASE		1		
	39	VKM3823-001	LIFTER BRACKET		1		
	41	WDL266035-2	SLIT WASHER		1		
	43	VKS5514-002MM	LOCK LEVER		3		
	44	VKY3133-002MM	RETURN SPRING		1		
	46	VKY3134-003MM	CLICK SPRING		1		
	47	VKS2252-00EKP	TRAY ASS'Y		3		
	48	VKS2250-003	TOP BRACKET		1		
	49	VKS5515-002	S.TRAY STOPPER		1		
	50	VKW5156-004	TORSION SPRING		1		
	51	VKS3703-00FMMKP	CLAMPER ASS'Y		1		
	62	FMYH4003-002	INSULATOR		2		
	63	FMYH4003-001	INSULATOR		2		
	65	----------	CD MECHA.ASS'Y		1		
	69	VMC0325-010	CONNECTOR		1		
	71	VKW5187-001	ROD		1		
	72	VYSA1R2-033	SPACER	FOR EWS176-008	1		
	73	LE30611-001AKP	C.B HOLDER	FOR CD CB	1		
	74	SBSF3008Z	SCREW	FOR HOLDER	2		
	75	QUQ110-1509AJ	FLAT WIRE	TRAVERSE 15	1		
	76	EWS176-008	FLAT WIRE	TRAVERSE 6	1		

Exploded View of CD Changer Mechanism and Parts List

MODEL : VC3-2

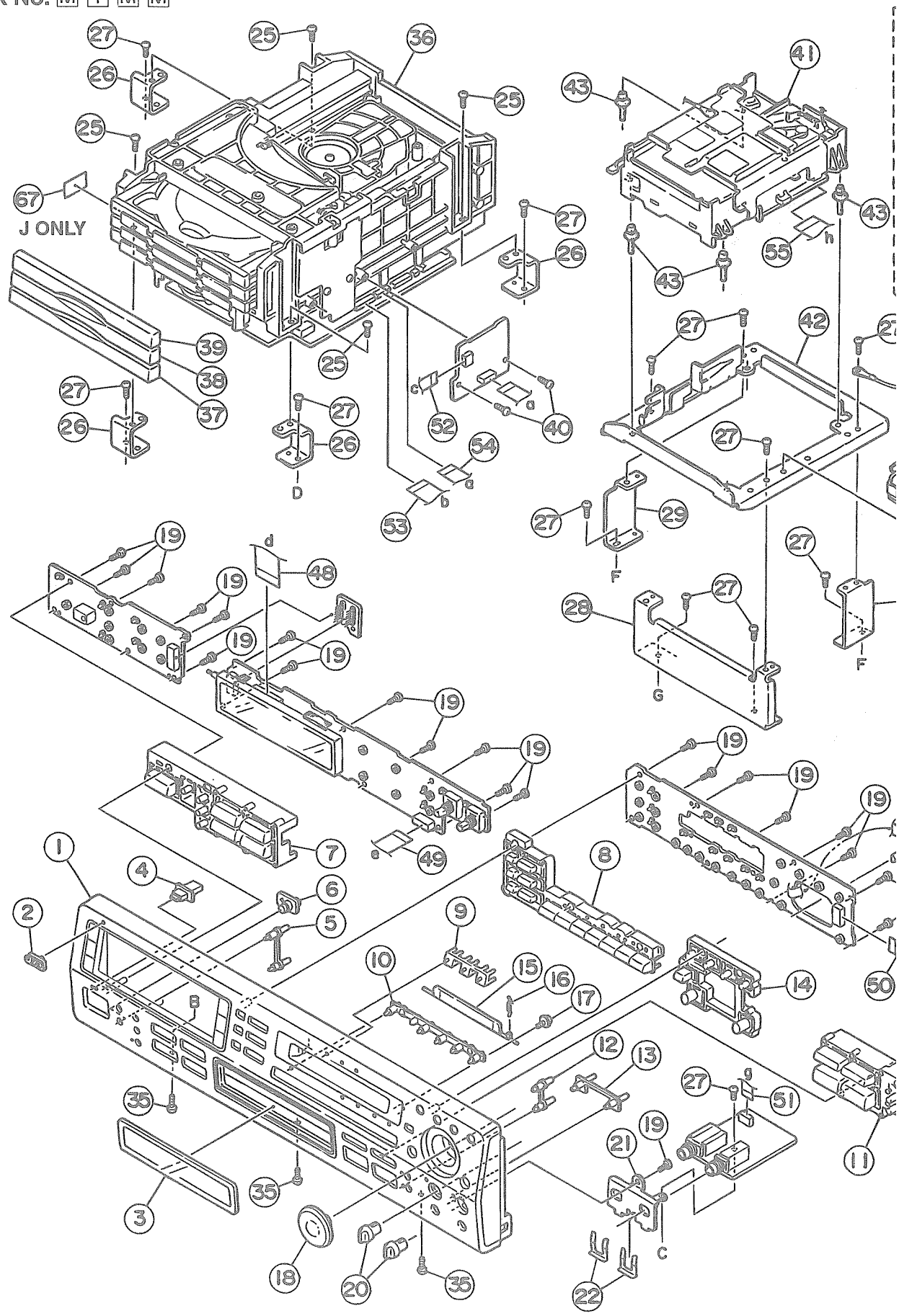


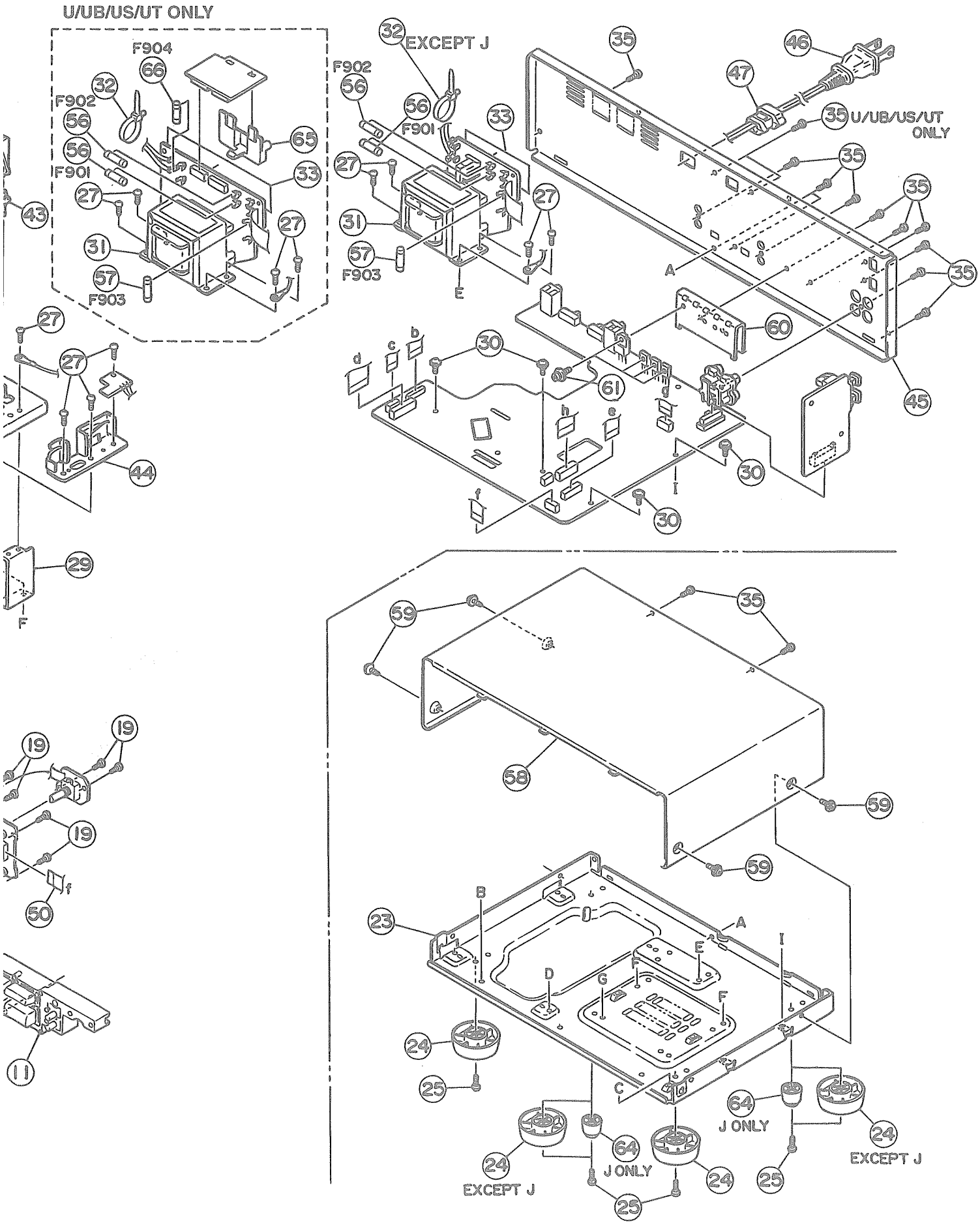
Block No. M 2 M M



Exploded View of General Assembly and Parts List

Block No. M 1 M M




U/UB/US/UT ONLY
F904
66
32
F902
56
56
F901
65
33
27
27
31
57
F903
43
27
27
44
29
F
32
EXCEPT J
F902
56
56
F901
33
27
27
31
57
F903
E
35
46
47
35
U/UB/US/UT ONLY
35
35
35
A
60
45
30
61
30
30
I
b
c
d
e
f
19
19
19
50
f
11
59
35
58
59
59
B
23
A
I
E
F
D
G
F
24
25
C
64
J ONLY
24
EXCEPT J
24
64
J ONLY
24
25
25
EXCEPT J

■General Assembly Parts List

BLOCK NO. M1MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	LV10012-001A	FRONT PANEL		1	J	
		LV10012-004A	FRONT PANEL		1	B,E,EE,EN	
		LV10012-004A	FRONT PANEL		1	U,UB,US,UT	
	2	VJD5429-001SS	JVC MARK		1		
	3	LV40073-003A	FL LENS		1		
	4	LV40064-001A	INDICATOR(A)		1		
	5	LV40065-001A	INDICATOR(B)		1		
	6	LV40075-001A	REMOCON FILTER		1		
	7	LV20014-003A	P.B.ASSY(A)		1	B,E,EE,EN	
		LV20014-003A	P.B.ASSY(A)		1	U,UB,US,UT	
		LV20014-001A	P.B.ASSY(A)		1	J	
	8	LV20017-001A	P.B.ASSY(B)		1		
	9	LV40068-001A	INDICATOR(E)		1		
	10	LV40069-001A	INDICATOR(F)		1		
	11	LV20018-001A	PUSH BUTTON(C)		1		
	12	LV40070-001A	INDICATOR(G)		1		
	13	LV40071-001A	INDICATOR(H)		1		
	14	LV20020-001A	PUSH BUTTON(D)		1		
	15	LV30039-001A	SHUTTER		1		
	16	LV40412-001A	SPRING		1		
	17	E72405-001	SPECIAL SCREW	FOR SHUTTER	1		
	18	LV40060-001A	JOG DIAL		1		
	19	SDSF2608Z	SCREW		24		
	20	LV40061-001A	KNOB		2		
	21	LV40072-001A	MIC BRACKET		1		
	22	VKL6752-001	SNAP PLATE	FOR JACK	2		
	23	LV10014-001A	CHASSIS BASE		1		
	24	E406379-008SS	FOOT ASS'Y		4	B,E,EE,EN	
		E406379-008SS	FOOT ASS'Y		4	U,UB,US,UT	
		E406379-008SS	FOOT ASS'Y		2	J	
	25	SBST3010Z	TH TAP SCREW		8		
	26	LV40062-001A	CD BRACKET		4		
	27	SBST3006Z	TH TAP SCREW		20		
	28	LV30041-001A	MD BRACKET(F)		1		
	29	LV40063-001A	MD BRACKET(R)		2		
	30	GBST3006Z	SCREW	FOR MAIN PWB	4		
⚠	31	QQT0200-003	POWER TRANSF.		1	B,E,EE,EN	
⚠		QQT0200-002	POWER TRANSF.		1	J	
⚠		QQT0200-004	POWER TRANSF.		1	U,UB,US,UT	
	32	E307572-001	FASTENER	FOR P CORD	1	B,E,EE,EN	
		E307572-001	FASTENER	FOR P CORD	1	U,UB,US,UT	
	33	LV40384-001A	BARRIER		1	J,E,B,EE,EN	
		LV40384-002A	BARRIER		1	U,UB,US,UT	
	35	QYSBSG3008M	TH.TAP.SCREW		16	B,E,EE,EN,J	
		QYSBSG3008M	TH.TAP.SCREW		18	U,UB,US,UT	
	36	----------	VIDEO 3CD CHANG	VC3 MECHA	1		
	37	LV30033-001A	FITTING(L)		1		
	38	LV30035-001A	FITTING(C)		1		
	39	LV30037-001A	FITTING(U)		1		
	40	SBSF3008Z	SCREW	CD TEXT PWB	2		
	41	----------	MD MECHA UNIT	MD MECHA	1		
	42	LV20022-001A	MD BASE		1		
	43	E406294-003	C.D INSULATOR		4		
	44	LV30042-001A	SIDE BRACKET		1		
					1		

BLOCK NO. M1MM

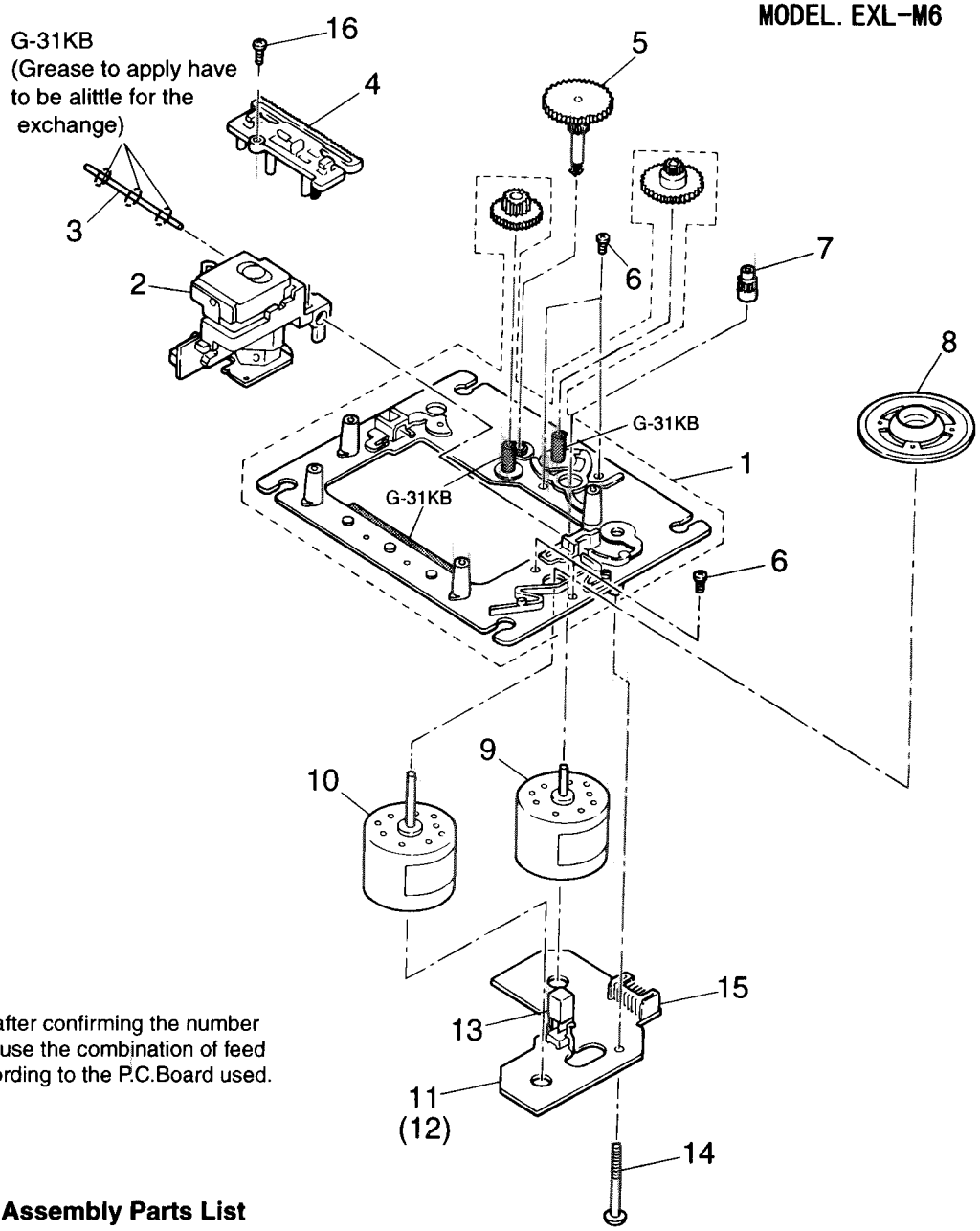
⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	45	LV20010-002A	REAR PANEL		1	B,E,EE,EN	
		LV20010-003A	REAR PANEL		1	U,UB,US,UT	
		LV20010-001A	REAR PANEL		1	J	
⚠	46	QMP3900-200	POWER CORD		1	E,EE,EN,U,US	
⚠		QMP5530-008BS	POWER CORD		1	B,UB	
⚠		QMP1480-200	POWER CORD		1	J	
⚠		QMP7380-200	POWER CORD		1	UT	
	47	QHS3771-108	CORD STOPPER		1	B,E,EE,EN	
		QHS3771-108	CORD STOPPER		1	U,UB,US,UT	
		QHS4077-108	CORD STOPPER		1	J	
	48	VWF1219-15TTB	SUMI CARD	FL+MAIN	1		
	49	VWF1214-20TTB	TAF CARD	FL+MAIN	1		
	50	VWF1209-15TTB	CARD WIRE	MD SW+MAIN	1		
	51	VWF1207-21TTB	SUMI CARD	MD SW+MAIN	1		
	52	VWF1206-09TTB	SUMI CARD	MIC+MAIN	1		
	53	VWF1019-08TTA	SUMI CARD	CD TEXT+MAIN	1		
	54	VWF1013-08TTA	SUMI CARD	CD MECHA+MAIN	1		
	55	VWF1021-08TTA	SUMI CARD	MD MECHA+MAIN	1		
	56	QMF51E2-R80SBS	FUSE	F901,F902	2	B,E,EE,EN	
		QMF51E2-R80SBS	FUSE	F901,F902	2	U,UB,US,UT	
		QMF51U1-R80-S	FUSE	F901,F902	2	J	
	57	QMF51E2-1R25	FUSE	F903	1	B,E,EE,EN	
		QMF51E2-1R25	FUSE	F903	1	U,UB,US,UT	
		QMF51U1-1R25-J1	FUSE	F903	1	J	
	58	LV20009-004A(S)	TOP COVER		1		
	59	E406308-003	SPECIAL SCREW	TOP(SIDE)	4		
	60	LV40203-001A	HEAT SINK		1		
	61	DPSP3008Z	SCREW		4		
	64	E47227-037	FOOT		2	J	
	65	VKS5011-001	VOLTAGE CONTACT		1	U,UB,US,UT	
	66	QMF51E2-R25-J1	FUSE		1	U,UB,US,UT	
	67	LV30064-017A	SPACER	#1-1000	1	J	

Exploded View of CD Mechanism Ass'y and Parts List

■ Grease Point

Block No. M 3 M M

MODEL. EXL-M6



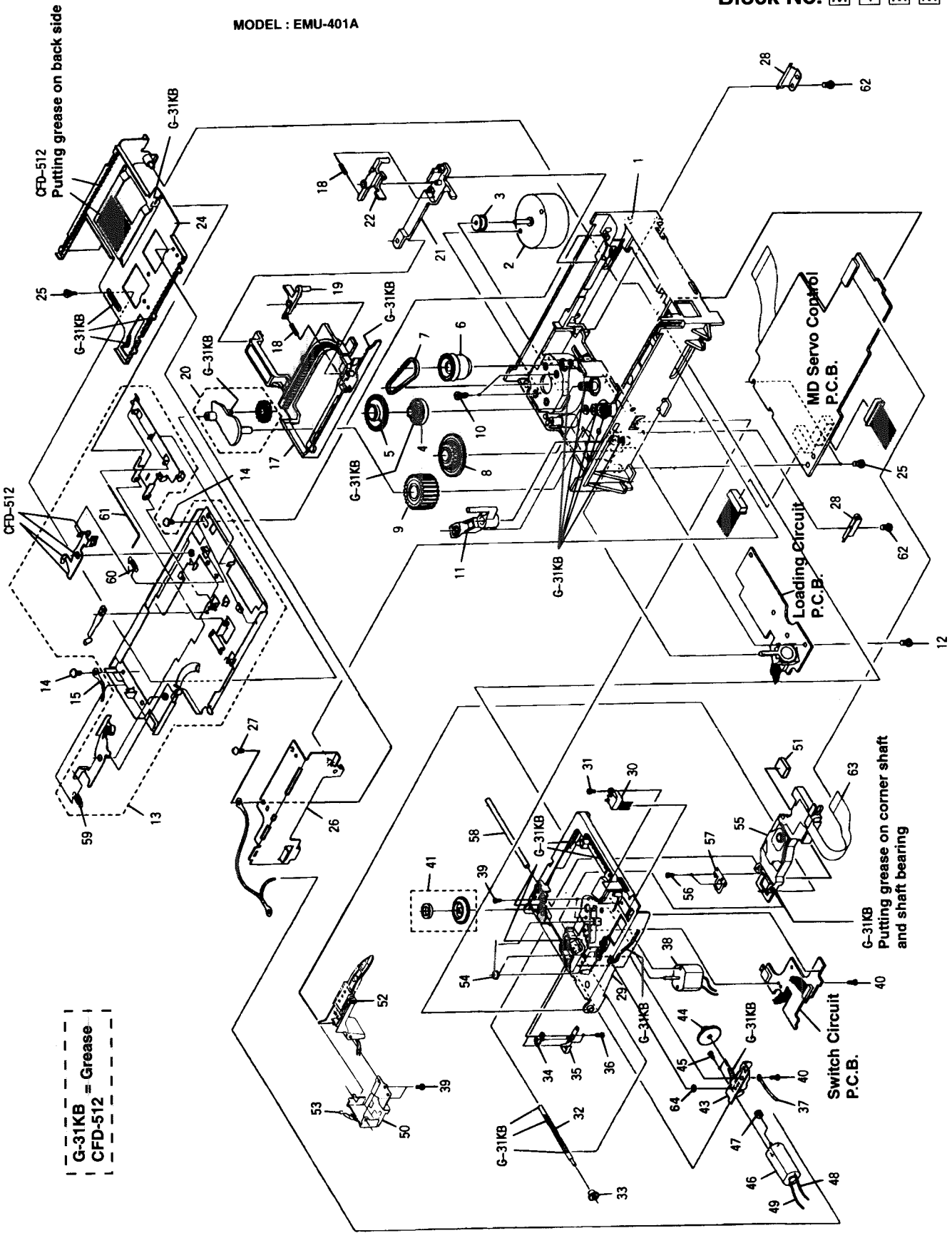
NOTE
Please order moutor after confirming the number of the P.C.Board because the combination of feed motor is different according to the P.C.Board used.

■CD Mechanism Assembly Parts List

⚠	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EPB-002PK	MECHA. BASE ASSY	1		
	2	OPTIMA-150S	OPTICAL PICK UP	1		
	3	E407782-001	CD SHAFT	1		
	4	E307746-001	CD RACK	1		
	5	EPB-003A	MECHA GEAR	1		
	6	SDSP2003N	SCREW	4		
	7	E406750-001	PINION GEAR	1		
	8	EPB309173A	TURN TABLE	1		
	9	E406784-001	FEED MOTOR	1	Use the No.11 P.C.Board	
		MDN-4RA3ETA-1	FEED MOTOR	1	Use the No.12 P.C.Board	
	10	E406783-001	SPINDLE MOTOR	1		
	11	EMW10190-001 (S)	P. C. BOARD	1		
	12	EMW10190-221 (S)	P. C. BOARD	1		
	13	ESB1100-005	LEAF SWITCH	1		
	14	E75832-001	SCREW	1		
	15	EMV5109-006B	CONN. TERMINAL	1		
	16	SDSF2006Z	SCREW	1		

Exploded View of MD Mechanism and Parts List

Block No. M 4 M M



■MD Mechanism(EMU-401A) Parts List

BLOCK NO. M4MM

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	1	E103156-002	LOADING BASE		1		
	2	MSN5G543C	MOTOR		1		
	3	E75984-222SS	MOTOR PULLEY		1		
	4	E409146-001	GEAR(5)		1		
	5	E409143-001	GEAR(2)		1		
	6	E409142-001	GEAR(1)		1		
	7	E75950-002	BELT		1		
	8	E409144-001	GEAR(3)		1		
	9	E409145-001	GEAR(4)		1		
	10	SPSK2640Z	MINI SCREW		2		
	11	E409149-002	SW LEVER		1		
	12	SBSF2606M	SCREW		1		
	13	E309825-010	CAR.BASE ASSY		1		
	14	GBSF2606Z	SCREW		3		
	15	EWPZ01-027	TERMINAL WIRE		1		
	17	E208853-001	RACK		1		
	18	E409153-002	SPRING		2		
	19	E409152-002	HOOK(L)		1		
	20	E409195-002	P.GEAR ASSY		1		
	21	E309824-001	LINK		1		
	22	E409154-002	HOOK(R)		1		
	24	E309829-003	S.BKT (R) ASSY		1		
	25	E409163-001	SPECIAL SCREW		3		
	26	E409164-003	S.BKT (L) ASSY		1		
	27	SBST2606Z	T.SCREW		1		
	28	E409162-002	BRACKET		2		
	29	E103258-001	MECHA BASE ASSY		1		
	30	QSW0508-001	PUSH SW		1		
	31	SPSJ2035M	MINI SCREW		1		
	32	E409553-001	LEAD SCREW		1		
	33	E409542-001	CAM GEAR		1		
	34	E409548-001	THRUST PLATE		1		
	35	E409135-001	THRUST SPRING		1		
	36	E409332-001	SPECIAL SCREW		2		
	37	EWT025-008	TERMINAL WIRE		1		
	38	FF-110PH-08280S	SP.MOTOR		1		
	39	SPSH1720M	MINI SCREW		4		
	40	SPST2606Z	SCREW		2		
	41	E309847-001	TURN TABLE		1		
	43	E409129-005	M.BKT ASSY		1		
	44	E409133-001	MIDDLE GEAR		1		
	45	SPSH1420Z	MINI SCREW		2		
	46	FF-N30VA-09210	FEED MOTOR		1		
	47	E409550-001	CAM GEAR		1		
	48	QWE269-06BB	WIRE ASSY		1		
	49	QWE260-05BB	WIRE ASSY		1		
	50	E310179-001	H.JOINT		1		
	51	LE30001-008A	SPACER		1		
	52	HMD-7B	HEAD UNIT		1		
	53	E409158-004	SPRING		1		
	54	E409165-001	M.SPRING		1		
	55	KMS-260A	MD PICK UNIT		1		
	56	SPSK1414Z	SCREW		2		
	57	E408255-003	RACK SPRING		1		
	58	E409141-001	GUIDE SHAFT		1		
	59	E409158-002	SPRING		1		
	60	E409158-003	SPRING		1		
	61	E409167-001	SPRING BAR		1		
	62	SBSF2606M	SCREW		2		
	63	EMW40008-001	FPC CABLE		1		
	64	QYWFM266013	WASHER		1		

Erectical Parts List

■Main Board

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 101	QET41EM-106	E CAPACITOR	10MF 20% 25V	
	C 102	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 103	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 104	QEN41EM-106	NP E CAPACITOR	10MF 20% 25V	
	C 111	QET41EM-106	E CAPACITOR	10MF 20% 25V	
	C 112	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 113	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 114	QEN41EM-106	NP E CAPACITOR	10MF 20% 25V	
	C 151	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 161	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 171	QENC1HM-105Z	NP E CAPACITOR	1.0MF 20% 50V	
	C 172	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 181	QCXB1CM-222Y	C CAPACITOR	2200PF 20% 16V	
	C 201	QET41EM-106	E CAPACITOR	10MF 20% 25V	
	C 202	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 203	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 204	QEN41EM-106	NP E CAPACITOR	10MF 20% 25V	
	C 211	QET41EM-106	E CAPACITOR	10MF 20% 25V	
	C 212	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 213	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 214	QEN41EM-106	NP E CAPACITOR	10MF 20% 25V	
	C 251	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 261	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 271	QENC1HM-105Z	NP E CAPACITOR	1.0MF 20% 50V	
	C 272	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C 281	QCXB1CM-222Y	C CAPACITOR	2200PF 20% 16V	
	C 301	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 302	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 303	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 351	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 352	QET41AM-107	E CAPACITOR	100MF 20% 10V	
	C 402	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 403	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 501	QEADOHZ-479A	GOLD CAPACITOR	47000MF	
	C 502	QET41HM-474	E CAPACITOR	.47MF 20% 50V	B,E,EE,EN
	C 502	QET41HM-474	E CAPACITOR	.47MF 20% 50V	J
	C 502	QET41HM-474	E CAPACITOR	.47MF 20% 50V	U,UB,US,UT
	C 504	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 507	QCS11HJ-220	C CAPACITOR	22PF 5% 50V	
	C 508	QCS11HJ-220	C CAPACITOR	22PF 5% 50V	
	C 511	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 512	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 513	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 541	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 542	QCBB1HK-221Y	C CAPACITOR	220PF 10% 50V	
	C 543	QCC11EM-473V	C CAPACITOR	.047MF 20% 25V	
	C 801	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 802	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 803	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 804	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 851	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 852	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 853	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 854	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 871	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 872	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 873	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 874	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 881	QET41HM-105	E CAPACITOR	1.0MF 20% 50V	
	C 901	QETM1EM-228	E CAPA	2200MF 20% 25V	
	C 902	QET41EM-108	E CAPACITOR	1000MF 20% 25V	
	C 903	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C 904	QET41AM-107	E CAPACITOR	100MF 20% 10V	
	C 905	QET41CM-107	E CAPACITOR	100MF 20% 16V	
	C 906	QET41CM-107	E CAPACITOR	100MF 20% 16V	
	C 907	QET41EM-106	E CAPACITOR	10MF 20% 25V	
	C 908	QETB1AM-228N	E CAPACITOR	2200MF 20% 10V	
	C 910	QCF11HP-103	C CAPACITOR	.010MF +80:-20%	
	C 911	QCF11HP-103	C CAPACITOR	.010MF +80:-20%	
	C 915	QET41CM-107	E CAPACITOR	100MF 20% 16V	
	C 916	QET41AM-477	E CAPACITOR	470MF 20% 10V	
	C 921	QETB1CM-478E	E.CAPA.	4700MF 20% 16V	
	C 922	QCF11HP-103	C CAPACITOR	.010MF +80:-20%	
	C 923	QET41HM-105	E CAPACITOR	1.0MF 20% 50V	
	C 924	QET41AM-477	E CAPACITOR	470MF 20% 10V	
	C 925	QET41AM-108	E CAPACITOR	1000MF 20% 10V	
	C 926	QCF11HP-103	C CAPACITOR	.010MF +80:-20%	
	C 927	QCF11HP-103	C CAPACITOR	.010MF +80:-20%	
	C 930	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	J,B,E,EE,EN
	C 931	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	J,B,E,EE,EN
	C 932	QET41AM-477	E CAPACITOR	470MF 20% 10V	
	C 933	QET41AM-107	E CAPACITOR	100MF 20% 10V	
	C 941	QETB1HM-227	E CAPACITOR	220MF 20% 50V	
	C 942	QETN1AM-227Z	E CAPACITOR	220MF 20% 63V	
	C 943	QETC1HM-106ZN	E CAPACITOR	10MF 20% 50V	
	C 944	QETC1HM-106ZN	E CAPACITOR	10MF 20% 50V	
	C 945	QET41AM-107	E CAPACITOR	100MF 20% 10V	
	C 991	QET41HM-474	E CAPACITOR	.47MF 20% 50V	
	CN 1	EMZ4001-002Z	TAB I.M		
	CN 2	EMZ4001-002Z	TAB I.M		
	CN301	QGB2501J1-09	CONNECTOR	MAIN PWB	
	CN351	QGB2501K1-09	CONNECTOR	OPT PWB	
	CN401	QGF1016C1-13	CONNECTOR	TO CD UNIT	
	CN402	VMC0163-R06	CONNECTOR		
	CN501	QGF1205C1-19	CONNECTOR		
	CN502	VMC0163-009	CONNECTOR		
	CN504	VMC0163-006	CONNECTOR		
	CN505	VMC0163-006	CONNECTOR	FOR FLASH WRITE	
	CN801	QGF1016C1-21	CONNECTOR	TO MD UNIT	
	CN811	QGF1016C1-19	CONNECTOR	TO CD UNIT	
	CN841	VMC0163-014	CONNECTOR		
	CN861	QGF1205C1-07	CONNECTOR	TO MIC&HP PWB	
	CN901	EMV7145-004Z	SOCKET I.M		
	CN902	EMV7145-003Z	SOCKET I.M		
	D 301	1SS133-T2	DIODE		
	D 302	1SS133-T2	DIODE		
	D 501	1SS133-T2	DIODE		
	D 502	1SS133-T2	DIODE		
	D 503	1SS133-T2	DIODE		
	D 504	1SS133-T2	DIODE		

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	D 541	1SS133-T2	DIODE		
	D 542	1SS133-T2	DIODE	FOR N-BUS	
	D 801	1SS133-T2	DIODE	MD STATUS	
	D 811	1SS133-T2	DIODE	CD STATUS	
⚠	D 901	1SR35-100	SI DIODE		
⚠	D 902	1SR35-100	SI DIODE		
⚠	D 903	1SR35-100	SI DIODE		
⚠	D 904	1SR35-100	SI DIODE		
	D 905	MTZ5.6JB	ZENER DIODE		
	D 906	1SS133-T2	DIODE		
	D 907	1SS133-T2	DIODE		
	D 908	MTZ10JAT-77	ZENER DIODE		
	D 909	1SS133-T2	DIODE		
	D 910	1SR35-100	SI DIODE		B,E,EE,EN
	D 910	1SR35-100	SI DIODE		U,UB,US,UT
	D 911	1SS133-T2	DIODE		U,UB,US,UT
	D 911	QWY124-5.0Y	BUS WIRE		J
	D 911	1SS133-T2	DIODE		B,E,EE,EN
	D 912	1SS133-T2	DIODE		B,E,EE,EN
	D 912	QWY124-5.0Y	BUS WIRE		J
	D 912	1SS133-T2	DIODE		U,UB,US,UT
⚠	D 921	1GWJ42-T5	DIODE		
⚠	D 922	1GWJ42-T5	DIODE		
⚠	D 923	1GWJ42-T5	DIODE		
⚠	D 924	1GWJ42-T5	DIODE		
	D 925	1SS133-T2	DIODE		
	D 927	1SR35-100	SI DIODE		
	D 928	1GWJ42-T5	DIODE		
⚠	D 941	1SR35-100	SI DIODE		
⚠	D 942	1SR35-100	SI DIODE		
	D 943	MTZ36JC	Z.DIODE I.M		
	D 944	1SS133-T2	DIODE		
	D 945	MTZ5.6JB	ZENER DIODE		
	D 981	1SS133-T2	DIODE *		
	D 982	1SS133-T2	DIODE		
	D 991	1SS133-T2	DIODE		
	D 992	1SS133-T2	DIODE		
	EP541	E409182-001SM	GRAND TERMINAL		
	FW751	VWSC03-083K3K	EF FLAT WIRE	JOG-MD SW PWB	
	FW901	VWSC07-12B23K	EF FLAT WIRE	TRANS-MAIN	
	IC301	TC74HC00AP	IC	D.OUT SEL	
	IC302	TC74HC00AP	IC	D.IN SEL	
	IC401	LC89170M	IC	CD TEXT DECODER	
	IC501	UPD784214GF-511	IC	CPU	
	IC502	IC-PST600/H/-T	IC	RESET	B,E,EE,EN
	IC502	IC-PST600/H/-T	IC	RESET	J
	IC502	IC-PST600/H/-T	IC	RESET	U,UB,US,UT
	IC511	TC55257DFL85L	IC	SRAM	
	IC801	NJM4580L	IC	MD LPF	
	IC811	NJM4580L	IC	CD LPF	
	IC821	BU4066BC	IC	LINE OUT SEL	
	IC831	BU4066BC	IC	REC SEL1	
	IC841	BU4066BC	IC	REC SEL2	
	IC851	BA15218N	IC	MIX AMP	
	IC871	BA15218N	IC	LINE IN AMP	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	IC901	UPC78N05H	IC		
	IC921	UPC2405AHF	IC		
	J 351	GP1F32T	OPTICAL JACK	OPT OUT	
	J 352	GP1F32R	OPTICAL JACK	OPT IN	
	J 541	QMS3533-V01	JACK	DCS JACK	
	J 542	QNS0077-001	3.5 JACK	N-BUS JACK	
	J 871	EMN00TV-409A	PIN JACK	LINE JACK	
	Q 181	2SC2001(L,K)	TRANSISTOR	L.OUT MUTING	
	Q 281	2SC2001(L,K)	TRANSISTOR	L.OUT MUTING	
	Q 401	KTC3199(GL)-T	TRANSISTOR		
	Q 501	DTC114ESA-T	DIGI.TRANSISTOR		B,E,EE,EN
	Q 501	DTC114ESA-T	DIGI.TRANSISTOR		J
	Q 501	DTC114ESA-T	DIGI.TRANSISTOR		U,UB,US,UT
	Q 541	KRA103M-T	TRANSISTOR *		
	Q 542	KTC3199(GL)-T	TRANSISTOR		
	Q 821	KRA103M-T	TRANSISTOR *		
	Q 822	KRC103M-T	TR I/M		
	Q 831	KRA103M-T	TRANSISTOR *		
	Q 832	KRA103M-T	TRANSISTOR *		
	Q 841	KRA103M-T	TRANSISTOR *		
	Q 842	KRA103M-T	TRANSISTOR *		
	Q 881	2SA933S(RS)	TR.I.M		
	Q 901	2SC3422(OY)	TRANSISTOR		
	Q 902	KTC3199(GL)-T	TRANSISTOR		
	Q 903	2SK301(P,Q)	FET I.M		
	Q 904	2SA933S(RS)	TR.I.M		
	Q 905	2SA1359/OY/	TRANSISTOR		
	Q 906	2SK301(P,Q)	FET I.M		
	Q 907	2SC3422(OY)	TRANSISTOR		
	Q 908	KTC3199(GL)-T	TRANSISTOR		
	Q 941	2SB647(CD)	TRANSISTOR		
	Q 981	KRC103M-T	TR I/M		
	R 101	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 102	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 103	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 104	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 105	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 106	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 111	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 112	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 113	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 114	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 115	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 116	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 131	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 132	QRD161J-123	C RESISTOR	12K 5% 1/4W	
	R 152	QRD161J-823	C RESISTOR	82K 5% 1/4W	
	R 171	QRD161J-393	C RESISTOR	39K 5% 1/4W	
	R 172	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 173	QRD161J-393	C RESISTOR	39K 5% 1/4W	
	R 176	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 182	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 183	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 184	QRD161J-471	C RESISTOR	470 5% 1/4W	
	R 201	QRD161J-223	C RESISTOR	22K 5% 1/4W	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 202	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 203	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 204	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 205	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 206	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 211	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 212	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 213	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 214	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 215	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 216	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 231	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 232	QRD161J-123	C RESISTOR	12K 5% 1/4W	
	R 252	QRD161J-823	C RESISTOR	82K 5% 1/4W	
	R 271	QRD161J-393	C RESISTOR	39K 5% 1/4W	
	R 272	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 273	QRD161J-393	C RESISTOR	39K 5% 1/4W	
	R 276	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 282	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 283	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 284	QRD161J-471	C RESISTOR	470 5% 1/4W	
	R 301	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 302	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 303	QRD161J-181	C RESISTOR	180 5% 1/4W	
	R 401	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 402	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 403	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 404	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 405	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 406	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 407	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 408	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 409	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 410	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 411	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 412	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 501	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 502	QRD161J-104	C RESISTOR	100K 5% 1/4W	
	R 503	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 504	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 506	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 508	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 509	QRD161J-104	C RESISTOR	100K 5% 1/4W	
	R 510	QRD161J-104	C RESISTOR	100K 5% 1/4W	
	R 511	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 512	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 513	QRD161J-151	C RESISTOR	150 5% 1/4W	
	R 514	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 515	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 516	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 517	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 518	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 519	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 520	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 521	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 522	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 523	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 524	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 525	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 526	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 527	QRD161J-822	C RESISTOR	8.2K 5% 1/4W	
	R 528	QRD161J-822	C RESISTOR	8.2K 5% 1/4W	
	R 529	QRD161J-822	C RESISTOR	8.2K 5% 1/4W	
	R 530	QRD161J-822	C RESISTOR	8.2K 5% 1/4W	
	R 531	QRD161J-822	C RESISTOR	8.2K 5% 1/4W	
	R 532	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
	R 533	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 534	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 535	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 536	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 537	QRD161J-473	C RESISTOR	47K 5% 1/4W	B,E,EE,EN
	R 537	QRD161J-473	C RESISTOR	47K 5% 1/4W	U,UB,US,UT
	R 539	QRD161J-473	C RESISTOR	47K 5% 1/4W	J
	R 540	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 541	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 542	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 543	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 544	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 545	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 548	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 549	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 550	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 551	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	B,E,EE,EN
	R 551	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	J
	R 551	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	U,UB,US,UT
	R 555	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 556	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 557	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 558	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 801	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 802	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 803	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 804	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R 811	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 821	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 822	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 823	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 831	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 832	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 833	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 834	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 841	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 842	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 843	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 844	QRD161J-473	C RESISTOR	47K 5% 1/4W	
	R 881	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 882	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R 883	QRD161J-101	C RESISTOR	100 5% 1/4W	
⚠	R 901	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	
	R 902	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	

BLOCK NO. 01

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 903	QRE141J-622Y	C RESISTOR	6.2K 5% 1/4W	
	R 904	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
⚠	R 905	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	
	R 906	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
⚠	R 907	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	U,UB,US,UT
	R 907	QRD14CJ-4R7SX	C RESISTOR	4.7 5% 1/4W	J
⚠	R 907	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	B,E,EE,EN
	R 908	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 909	QRD14CJ-4R7SX	C RESISTOR	4.7 5% 1/4W	J
	R 909	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	U,UB,US,UT
	R 909	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	B,E,EE,EN
	R 910	QRD161J-222	C RESISTOR	2.2K 5% 1/4W	
	R 921	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 925	QRD161J-471	C RESISTOR	470 5% 1/4W	
	R 926	QRD161J-471	C RESISTOR	470 5% 1/4W	
	R 941	QRD161J-472	C RESISTOR	4.7K 5% 1/4W	
⚠	R 942	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	U,UB,US,UT
	R 942	QRD14CJ-4R7SX	C RESISTOR	4.7 5% 1/4W	J
⚠	R 942	QRZ0077-4R7X	F RESISTOR	4.7 1/0W	B,E,EE,EN
	R 943	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 981	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 982	QRD161J-101	C RESISTOR	100 5% 1/4W	
	R 991	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 992	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	S 531	QSS7A22-V10	SLIDE SW	TAPE/MD	
	S 532	QSS7A22-V10	SLIDE SW	MASTER/SLAVE	
	W 902	VWE240-05PWNT	UL WIRE	TRANS-SHASSIS	
	X 501	QAX0356-001Z	RESONATOR	10MHZ EFO-EC100	
	X 502	QAX0401-001	CRYSTAL	CPU SUB CLK	
	Z 91	VMZ0125-001Z	FUSE CLIP		
	Z 92	VMZ0125-001Z	FUSE CLIP		
	Z 93	VMZ0125-001Z	FUSE CLIP		
	Z 94	VMZ0125-001Z	FUSE CLIP		
	Z 95	VMZ0125-001Z	FUSE CLIP		
	Z 96	VMZ0125-001Z	FUSE CLIP		

■Front Board

BLOCK NO. 02

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 701	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 702	QER41AM-107	E CAPACITOR	100MF 20% 10V	
	C 703	QCBB1HK-681Y	C CAPACITOR	680PF 10% 50V	
	C 741	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C 742	QFV11HJ-393AZM	TF CAPACITOR	.039MF 5% 50V	
	C 743	QER41AM-107	E CAPACITOR	100MF 20% 10V	
	C 749	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C 751	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	CN701	QGB2012J1-09	CONNECTOR	P.SW PWB	
	CN711	QGG2002M4-09	PIN HEDDER	TO P.SW PWB	
	CN712	QGG2002M4-09	PIN HEDDER	TO FL PWB	
	CN721	QGB2012J1-09	CONNECTOR	FL PWB	
	CN722	QGF1205F1-19	CONNECTOR	FL PWB TO MAIN	
	CN723	VMC0163-014	CONNECTOR	AUDIO+LED	
	CN724	QGF1205C1-07	CONNECTOR	H.P.+MIC.	
	CN751	VMC0163-R09	CONNECTOR	KEY PWB TO MAIN	
	C1201	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C1202	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C1203	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C2201	QCBB1HK-101Y	C CAPACITOR	100PF 10% 50V	
	C2202	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C2203	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C6001	QCXB1CM-222Y	C CAPACITOR	2200PF 20% 16V	
	C6002	QENC1HM-105Z	NP E CAPACITOR	1.0MF 20% 50V	
	C6003	QCBB1HK-331Y	C CAPACITOR	330PF 10% 50V	
	C6005	QET41EM-475	E CAPACITOR	4.7MF 20% 25V	
	C6008	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C6009	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	C6101	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C6102	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C6103	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C6104	QET41CM-476	E CAPACITOR	47MF 20% 16V	
	C6201	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C6202	QET41CM-107	E CAPACITOR	100MF 20% 16V	
	C6203	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C6204	QET41CM-107	E CAPACITOR	100MF 20% 16V	
	C6209	QCVB1CN-103Y	C CAPACITOR	.010MF 30% 16V	
	D 701	SLR-325VCT31	LED I/M	POWER	
	D 702	SLR-325MCT31	LED I/M	PITCH+	
	D 703	SLR-325DCT31	LED I/M	PITCH-	
	D 704	SLR-325VCT31	LED I/M	BEST	
	D 705	SLR-325VCT31	LED I/M	LISTEN	
	D 721	SLR-325DCT31	LED I/M	MD	
	D 722	SLR-325MCT31	LED I/M	CD	
	D 723	SLR-325VCT31	LED I/M	MIX BALANCE	
	D 724	SLR-325VCT31	LED I/M	REC LEVEL	
	D 726	1SS133-T2	DIODE		
	D 727	1SS133-T2	DIODE		
	D 728	1SS133-T2	DIODE		
	D 729	1SS133-T2	DIODE		
	D 751	SLR-325MCT31	LED I/M	DISC1	
	D 752	SLR-325MCT31	LED I/M	DISC2	
	D 753	SLR-325MCT31	LED I/M	DISC3	
	D 754	SLR-325VCT31	LED I/M	REC	
	D 755	SLR-325VCT31	LED I/M	S-OPT	

BLOCK NO. 02

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	D 756	SLR-325VCT31	LED I/M	S-CD	
	D 757	SLR-325VCT31	LED I/M	S-LINE	
	D 758	SLR-325VCT31	LED I/M	S-MIC	
	D 759	SLR-325DCT31	LED I/M	FS32K	
	D 760	SLR-325DCT31	LED I/M	FS44.1K	
	D 761	SLR-325DCT31	LED I/M	FS48K	
	DI721	QLF0039-001	FL TUBE		
	IC601	NJM4580L	IC	MIC AMP	
	IC621	BA15218N	IC	HP AMP	
	IC701	SBX1785-52A	RM RECIVER		
	IC721	M66004SP	FL DRIVER IC		
	IC751	M50253P	IC		
	JS751	QSW0446-001	R ENCODER	JOG	
	J6001	QMS6035-V01	JACK	MIC JACK	
	J6201	QMS6032-V01	JACK	HP JACK	
	Q 701	KRC103M-T	TR I/M	FOR POWER LED	
	Q 705	KRC103M-T	TR I/M	FOR LISTEN LED	
	Q 723	KRC103M-T	TR I/M	FOR MIX BAL LED	
	Q 726	KTC3199(GL)-T	TRANSISTOR	FOR 1G	
	Q 727	KTC3199(GL)-T	TRANSISTOR	FOR 15G	
	Q 728	KTC3199(GL)-T	TRANSISTOR	FOR 16G	
	Q 729	KRA103M-T	TRANSISTOR *	FOR S36	
	Q 730	KRA103M-T	TRANSISTOR *	FOR S36	
	Q1401	KTC3199(GL)-T	TRANSISTOR	MIX VR SW	
	Q2401	KTC3199(GL)-T	TRANSISTOR	MIX VR SW	
	R 701	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 702	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 703	QRD161J-122	C RESISTOR	1.2K 5% 1/4W	
	R 704	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 705	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 706	QRD167J-332	C RESISTOR	3.3K 5% 1/4W	
	R 707	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R 708	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 711	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 712	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 713	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 714	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 715	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 721	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 722	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 723	QRD161J-122	C RESISTOR	1.2K 5% 1/4W	
	R 724	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 725	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 726	QRD167J-332	C RESISTOR	3.3K 5% 1/4W	
	R 727	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 728	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 729	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 730	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 736	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 737	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 738	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 739	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 740	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 741	QRD161J-333	C RESISTOR	33K 5% 1/4W	
	R 749	QRD161J-223	C RESISTOR	22K 5% 1/4W	

BLOCK NO. 02

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 751	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 752	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 753	QRD161J-122	C RESISTOR	1.2K 5% 1/4W	
	R 754	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 755	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 756	QRD167J-332	C RESISTOR	3.3K 5% 1/4W	
	R 757	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R 758	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 760	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 761	QRD161J-102	C RESISTOR	1.0K 5% 1/4W	
	R 762	QRD161J-122	C RESISTOR	1.2K 5% 1/4W	
	R 763	QRD161J-182	C RESISTOR	1.8K 5% 1/4W	
	R 764	QRD161J-272	C RESISTOR	2.7K 5% 1/4W	
	R 765	QRD167J-332	C RESISTOR	3.3K 5% 1/4W	
	R 766	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R 767	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 769	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R 770	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R 781	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 782	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 783	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 784	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 785	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 786	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 787	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 788	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 789	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 790	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R 791	QRD161J-331	C RESISTOR	330 5% 1/4W	
	R1201	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R1202	QRD161J-104	C RESISTOR	100K 5% 1/4W	
	R1204	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R1205	QRD161J-680	C RESISTOR	68 5% 1/4W	
	R1206	QRD161J-820	C RESISTOR	82 5% 1/4W	
	R1401	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R1402	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R1403	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R2201	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R2202	QRD161J-104	C RESISTOR	100K 5% 1/4W	
	R2204	QRD167J-562	C RESISTOR	5.6K 5% 1/4W	
	R2205	QRD161J-680	C RESISTOR	68 5% 1/4W	
	R2206	QRD161J-820	C RESISTOR	82 5% 1/4W	
	R2401	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R2402	QRD161J-223	C RESISTOR	22K 5% 1/4W	
	R2403	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R6001	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R6002	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R6003	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R6004	QRD161J-221	C RESISTOR	220 5% 1/4W	
	R6005	QRD161J-123	C RESISTOR	12K 5% 1/4W	
	R6006	QRD161J-103	C RESISTOR	10K 5% 1/4W	
	R6101	QRD161J-681	C RESISTOR	680 5% 1/4W	
	R6102	QRD161J-681	C RESISTOR	680 5% 1/4W	
	R6103	QRD161J-681	C RESISTOR	680 5% 1/4W	
	R6104	QRD161J-681	C RESISTOR	680 5% 1/4W	

BLOCK NO. 02

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	S 701	QSW0683-001Z	PUSH SW I.M	POWER	
	S 702	QSW0683-001Z	PUSH SW I.M	CLOCK/TIMER	
	S 703	QSW0683-001Z	PUSH SW I.M	PITCH OFF	
	S 704	QSW0683-001Z	PUSH SW I.M	PITCH+	
	S 705	QSW0683-001Z	PUSH SW I.M	PITCH-	
	S 706	QSW0683-001Z	PUSH SW I.M	BEST	
	S 707	QSW0683-001Z	PUSH SW I.M	LISTEN	
	S 708	QSW0683-001Z	PUSH SW I.M	SKIP	
	S 709	QSW0683-001Z	PUSH SW I.M	CD REC	
	S 721	QSW0683-001Z	PUSH SW I.M	STOP	
	S 722	QSW0683-001Z	PUSH SW I.M	PLAY	
	S 723	QSW0683-001Z	PUSH SW I.M	FWD	
	S 724	QSW0683-001Z	PUSH SW I.M	BWD	
	S 725	QSW0683-001Z	PUSH SW I.M	MD	
	S 726	QSW0683-001Z	PUSH SW I.M	CD	
	S 751	QSW0683-001Z	PUSH SW I.M	OPEN/CLOSE1	
	S 752	QSW0683-001Z	PUSH SW I.M	OPEN/CLOSE2	
	S 753	QSW0683-001Z	PUSH SW I.M	OPEN/CLOSE3	
	S 754	QSW0683-001Z	PUSH SW I.M	DISC1	
	S 755	QSW0683-001Z	PUSH SW I.M	DISC2	
	S 756	QSW0683-001Z	PUSH SW I.M	DISC3	
	S 757	QSW0683-001Z	PUSH SW I.M	REC STOP	
	S 758	QSW0683-001Z	PUSH SW I.M	REC PAUSE	
	S 759	QSW0683-001Z	PUSH SW I.M	REC START	
	S 760	QSW0683-001Z	PUSH SW I.M	EJECT	
	S 761	QSW0683-001Z	PUSH SW I.M	S-OPT	
	S 762	QSW0683-001Z	PUSH SW I.M	S-CD	
	S 763	QSW0683-001Z	PUSH SW I.M	S-LINE	
	S 764	QSW0683-001Z	PUSH SW I.M	S-MIC	
	S 765	QSW0683-001Z	PUSH SW I.M	CANCEL	
	S 766	QSW0683-001Z	PUSH SW I.M	SET	
	S 767	QSW0683-001Z	PUSH SW I.M	PLAYMODE	
	S 768	QSW0683-001Z	PUSH SW I.M	CHARA/DISP	
	S 769	QSW0683-001Z	PUSH SW I.M	EDIT	
	S 770	QSW0683-C01Z	PUSH SW I.M	TITLE	
	SPACE	LV30064-014A	SPACER		
	SPACE	LV30064-015A	SPACER		
	VR641	QVQ0115-W15	V RESISTOR	MIX VOL	
	VR642	QVQ0117-A14	V RESISTOR	REC VOL	

■CD Servo & Mechanism Control Board (VC3-2)

BLOCK NO. 03

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 251	NCS21HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 252	NCS21HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 253	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 254	QERF1AM-476Z	E CAPACITOR	47MF 20% 10V	
	C 281	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 291	QERF1AM-476Z	E CAPACITOR	47MF 20% 10V	
	C 601	NCB21HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 602	NCB21HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 603	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 604	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 605	NCS21HJ-271AY	C CAPACITOR	270PF 5% 50V	
	C 606	NCS21HJ-470AY	C.CAPA. C.M	47PF 5% 50V	
	C 607	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 608	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 609	NCB21HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 610	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 611	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 612	QER41HM-105	E CAPACITOR	1.0MF 20% 50V	
	C 613	NCS21HJ-101AY	C CAPACITOR	100PF 5% 50V	
	C 614	NCB21HK-273AY	C CAPACITOR	.027MF 10% 50V	
	C 615	NCB21HK-472AY	C CAPACITOR	4700PF 10% 50V	
	C 616	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 617	NCS21HJ-331AY	C CAPACITOR	330PF 5% 50V	
	C 621	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 623	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 624	QER41AM-107	E CAPACITOR	100MF 20% 10V	
	C 631	QER41CM-106	E CAPACITOR	10MF 20% 16V	
	C 632	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 633	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 651	NCS21HJ-120AY	C CAPACITOR	12PF 5% 50V	
	C 652	NCS21HJ-150AY	C CAPACITOR	15PF 5% 50V	
	C 653	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 654	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 655	QER41AM-227N	E CAPACITOR	220MF 20% 10V	
	C 656	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 657	NCB21HK-222AY	C CAPACITOR	2200PF 10% 50V	
	C 658	NCB21HK-222AY	C CAPACITOR	2200PF 10% 50V	
	C 661	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 662	QER41AM-107	E CAPACITOR	100MF 20% 10V	
	C 663	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 664	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 665	NCB21HK-223AY	C CAPACITOR	.022MF 10% 50V	
	C 666	NCS21HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 667	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 668	NCB21HK-473AY	C CAPACITOR	.047MF 10% 50V	
	C 671	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 672	QER41AM-107	E CAPACITOR	100MF 20% 10V	
	C 801	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 802	NCB21HK-103AY	C CAPACITOR	.010MF 10% 50V	
	C 811	NCS21HJ-101AY	C CAPACITOR	100PF 5% 50V	
	C 812	NCS21HJ-101AY	C CAPACITOR	100PF 5% 50V	
	C 813	NCS21HJ-101AY	C CAPACITOR	100PF 5% 50V	
	C 814	NCS21HJ-101AY	C CAPACITOR	100PF 5% 50V	
	C 821	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 822	QER41AM-227N	E CAPACITOR	220MF 20% 10V	

BLOCK NO. 03

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 851	QER41CM-106	E CAPACITOR	10MF 20% 16V	
	C 852	QER41CM-106	E CAPACITOR	10MF 20% 16V	
	C 855	NCB21HK-104	C CAPACITOR	.10MF 10% 25V	
	C 859	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 860	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	CN151	EMV7171-115R	15FFC CONNECTOR	VIDEO CD	
	CN152	QGA2001F1-12	12P CN RIG	VIDEO CD	
	CN601	EMV7171-115R	15FFC CONNECTOR	TRAVERSE	
	CN651	QGF1016F1-19	CONNECTOR	MAIN	
	CN652	QGF1016F1-05	CONNECTOR	OSD	
	CN653	QGF1016F1-13	CONNECTOR	CD TEXT	
	CN801	VMC0075-006	6P PLUG ASSY	TRAVERSE	
	CN851	VMC0107-R03	SOCKET	DISC DETECTION	
	CN854	VMC0289-P07	CONNECTOR	TRAY SWITCH	
	CN855	VMC0324-12310	CONNECTOR	CAM SWITCH	
	IC251	UPD78055GCA27	IC		
	IC601	AN8806SB	IC C.M	RF AMP	
	IC651	MN35510	IC	DSP & DAC	
	IC801	BA6897FP-W	IC	PU DRIVE	
	IC851	TA8409S	IC	L MOTOR DRIVE	
	IC852	TA8409S	IC	R MOTOR DRIVE	
	L 851	VQP0033-100Z	INDUCTOR	VS DE-COUPLE	
	L 853	VQP0033-100Z	INDUCTOR	L MOTOR	
	L 854	VQP0033-100Z	INDUCTOR	R MOTOR	
	Q 291	2SB1357(E,F)	TR.I.M	/P.ON	
	Q 631	2SA1037AKT146	CHIP TRANSISTOR	APC	
	Q 842	DTA144ES	TR I/M	/DISC	
	R 251	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 252	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 253	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 254	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 255	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 256	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 257	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 258	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 259	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 260	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 261	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 262	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 263	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 264	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 265	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 266	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 267	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 268	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 269	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 270	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 271	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 272	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 273	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 274	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 275	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 276	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 277	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 278	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	

BLOCK NO. 03

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 279	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 281	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 282	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 283	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 284	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 285	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 286	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 287	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 288	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 289	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 291	NRSA02J-122NY	MG RESISTOR	1.2K 5% 1/10W	
	R 292	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 293	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 601	NRSA02J-274NY	MG RESISTOR	270K 5% 1/10W	
	R 602	NRSA02J-154NY	RES. C.M	150K 5% 1/10W	
	R 603	NRSA02J-273NY	MG RESISTOR	27K 5% 1/10W	
	R 604	NRSA02J-114NYM	MG RESISTOR	110K 5% 1/10W	
	R 605	NRSA02J-104NY	MG RESISTOR	100K 5% 1/10W	
	R 606	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 607	NRSA02J-822NY	MG RESISTOR	8.2K 5% 1/10W	
	R 611	NRSA02J-123NY	MG RESISTOR	12K 5% 1/10W	
	R 612	NRSA02J-125NY	MG RESISTOR	1.2M 5% 1/10W	
	R 631	NRSA02J-2R2NYM	RES. C.M	2.2 5% 1/10W	
	R 632	NRSA02J-100NY	MG RESISTOR	10 5% 1/10W	
	R 634	NRSA02J-120NY	MG RESISTOR	12 5% 1/10W	
	R 635	NRSA02J-121NY	MG RESISTOR	120 5% 1/10W	
	R 636	NRSA02J-910NY	RES. C.M	91 5% 1/10W	
	R 651	NRSA02J-271NY	MG RESISTOR	270 5% 1/10W	
	R 652	NRSA02J-220NY	MG RESISTOR	22 5% 1/10W	
	R 657	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 658	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 661	NRSA02J-220NY	MG RESISTOR	22 5% 1/10W	
	R 662	NRSA02J-471NY	RES. C.M	470 5% 1/10W	
	R 663	NRSA02J-124NY	MG RESISTOR	120K 5% 1/10W	
	R 665	NRSA02J-683NY	MG RESISTOR	68K 5% 1/10W	
	R 666	NRSA02J-155NY	MG RESISTOR	1.5M 5% 1/10W	
	R 667	NRSA02J-562NY	MG RESISTOR	5.6K 5% 1/10W	
	R 671	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 672	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 673	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 674	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 675	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 676	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 677	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 678	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 679	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 680	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 681	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 682	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 683	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 684	NRSA02J-271NY	MG RESISTOR	270 5% 1/10W	
	R 685	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 686	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 687	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 688	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	

BLOCK NO. 03

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 689	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 690	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 691	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 692	NRSA02J-101NY	MG RESISTOR	100 5% 1/10W	
	R 693	NRSA02J-471NY	RES. C.M	470 5% 1/10W	
	R 694	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 801	NRSA02J-182NY	MG RESISTOR	1.8K 5% 1/10W	
	R 802	NRSA02J-472NY	MG RESISTOR	4.7K 5% 1/10W	
	R 803	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 804	NRSA02J-683NY	MG RESISTOR	68K 5% 1/10W	
	R 805	NRSA02J-822NY	MG RESISTOR	8.2K 5% 1/10W	
	R 806	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 807	NRSA02J-222NY	MG RESISTOR	2.2K 5% 1/10W	
	R 808	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 811	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 831	NRSA02J-151NY	MG RESISTOR	150 5% 1/10W	
	R 832	NRSA02J-103NY	MG RESISTOR	10K 5% 1/10W	
	R 842	NRSA02J-473NY	MG RESISTOR	47K 5% 1/10W	
	R 851	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 852	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 853	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 854	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 855	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 856	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 859	NRSA02J-181NY	MG RESISTOR	180 5% 1/10W	
	R 861	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 862	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 863	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 864	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 865	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 866	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 871	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 872	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 873	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 874	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 875	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 876	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 880	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 881	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 882	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 883	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 884	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 885	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 886	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 887	NRSA02J-102NY	MG RESISTOR	1.0K 5% 1/10W	
	R 890	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 891	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 892	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 893	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 894	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 895	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 896	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	R 897	NRSA02J-223NY	MG RESISTOR	22K 5% 1/10W	
	W 601	EWF102-047	TER.WIRE	D.GND	
	X 251	QAX0360-001Z	CRYSTAL	FOR IC251	
	X 651	VCX5016-934V	CRYSTAL	FOR IC651	

■CD Select Switch Board

BLOCK NO. 04

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	CN804	QGB2016J1-07	CONNECTOR		
	SW 1	QSW0507-001	LEVER SWITCH		
	SW 2	QSW0507-001	LEVER SWITCH		
	SW 3	QSW0507-001	LEVER SWITCH		
	SW 4	QSW0507-001	LEVER SWITCH		
	SW 5	QSW0507-001	LEVER SWITCH		
	SW 6	QSW0507-001	LEVER SWITCH		

■MD Servo & Mechanism Control Board (EMU-401A)

BLOCK NO. 05

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 300	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 302	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 307	NCB31HK-222AY	C CAPACITOR	2200PF 10% 50V	
	C 310	NCB31HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 311	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 312	NEA20GM-476NZ	E CAPACITOR	47MF 20%	
	C 314	NCB31CK-223A	C.CAPA. C.M	.022MF 10% 16V	
	C 315	NCB31HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 316	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 318	NCB31HK-682AY	C CAPACITOR	6800PF 10% 50V	
	C 319	NCB31CK-333AY	C CAPACITOR	.033MF 10% 16V	
	C 320	NCB20JK-105AY	C.CAPA. C.M	1.0MF 10% 10V	
	C 321	NCB31HK-472AY	C.CAPA. C.M	4700PF 10% 50V	
	C 322	NCB20JK-105AY	C.CAPA. C.M	1.0MF 10% 10V	
	C 323	NCB31HK-682AY	C CAPACITOR	6800PF 10% 50V	
	C 324	NCB21CK-224AYU	C CAPACITOR	.22MF 10% 16V	
	C 325	NCB31CK-103AYM	C.CAPA. C.M	.010MF 10% 16V	
	C 326	NCB31CK-223A	C.CAPA. C.M	.022MF 10% 16V	
	C 327	NCB31CK-104AY	C.CAPA. C.M	.10MF 10% 16V	
	C 328	NCB31CK-104AY	C.CAPA. C.M	.10MF 10% 16V	
	C 330	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 333	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 334	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 340	NCB31CK-223A	C.CAPA. C.M	.022MF 10% 16V	
	C 341	NCB31CK-223A	C.CAPA. C.M	.022MF 10% 16V	
	C 342	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 350	NEA20GM-476NZ	E CAPACITOR	47MF 20%	
	C 351	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 352	NEA20GM-476NZ	E CAPACITOR	47MF 20%	
	C 353	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 354	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 355	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 356	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 357	NCS21HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 358	NCS21HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 359	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 361	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 371	NCS31HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 372	NCS31HJ-100AY	C CAPACITOR	10PF 5% 50V	
	C 375	NCB31CK-103AYM	C.CAPA. C.M	.010MF 10% 16V	
	C 376	NCB21CK-474AY	C CAPACITOR	.47MF 10% 16V	
	C 377	NCS31HJ-471AY	C CAPACITOR	470PF 5% 50V	
	C 379	NCB21CK-474AY	C CAPACITOR	.47MF 10% 16V	
	C 380	NCB31CK-153AYU	C CAPACITOR	.015MF 10% 16V	
	C 381	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 382	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 390	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 400	NEA20JM-226NZ	E CAPACITOR	22MF 20% 6.3V	
	C 401	NEA20JM-107NZM	E CAPACITOR	100MF 20% 6.3V	
	C 402	NCB31HK-331AY	C CAPACITOR	330PF 10% 50V	
	C 403	NEA20GM-476NZ	E CAPACITOR	47MF 20%	
	C 404	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 410	NEA20JM-107NZM	E CAPACITOR	100MF 20% 6.3V	
	C 411	NCF31AZ-105AYUU	C CAPACITOR	1.0MF +80:-20%	
	C 412	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	

BLOCK NO. 05

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	C 421	NCB31HK-561AY	C CAPACITOR	560PF 10% 50V	
	C 423	NCB31HK-561AY	C CAPACITOR	560PF 10% 50V	
	C 425	NCB31HK-561AY	C CAPACITOR	560PF 10% 50V	
	C 427	NCB31HK-561AY	C CAPACITOR	560PF 10% 50V	
	C 429	NCB31HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 431	NCB31HK-102AY	C CAPACITOR	1000PF 10% 50V	
	C 433	NCB31HK-562AY	C CAPACITOR	5600PF 10% 50V	
	C 435	NCB31HK-562AY	C CAPACITOR	5600PF 10% 50V	
	C 437	NCB31CK-103AYM	C.CAPA. C.M	.010MF 10% 16V	
	C 439	NCB31CK-103AYM	C.CAPA. C.M	.010MF 10% 16V	
	C 450	NEA20JM-107NZM	E CAPACITOR	100MF 20% 6.3V	
	C 451	NEA20GM-107NZM	E CAPACITOR	100MF 20%	
	C 452	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 453	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 455	NDC32AJ-101X	C CAPACITOR		
	C 480	NEA20JM-476NZ	E CAPACITOR	47MF 20% 6.3V	
	C 481	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 482	NEA20JM-226NZ	E CAPACITOR	22MF 20% 6.3V	
	C 483	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 484	NEA21CM-106NZ	E CAPACITOR	10MF 20% 16V	
	C 485	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 486	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 487	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 488	NEA21CM-106NZ	E CAPACITOR	10MF 20% 16V	
	C 490	NCB31CK-103AYM	C.CAPA. C.M	.010MF 10% 16V	
	C 491	NCB31HK-222AY	C CAPACITOR	2200PF 10% 50V	
	C 492	NCB31HK-222AY	C CAPACITOR	2200PF 10% 50V	
	C 493	NCF21CZ-105AY	C CAPACITOR	1.0MF +80:-20%	
	C 501	NCS21HJ-220AY	C CAPACITOR	22PF 5% 50V	
	C 502	NCS21HJ-220AY	C CAPACITOR	22PF 5% 50V	
	C 511	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 512	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 515	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	C 591	NCF31CZ-104AY	C CAPACITOR	.10MF +80:-20%	
	CN321	EMV7150-221E	CONNECTOR C.M		
	CN407	EMV5109-007BE	SOCKET C.M.		
	CN408	EMV5109-008BE	SOCKET C.M.		
	CN521	EMV7154-221E	SOCKET C.M		
	D 310	1SS355-X	DIODE C.M		
	D 451	SC802-06-X	DIODE		
	D 452	SC802-06-X	DIODE		
	IC310	CXA2523AR	IC C.M		
	IC340	TC7S08F-W	IC C.M		
	IC350	CXD2652AR	IC C.M		
	IC390	M5M4V4400CTP-7	IC		
	IC410	M56758FP-X	IC 5CH DRIVER		
	IC450	BD7910FV-X	IC M.HEAD DRIVE		
	IC480	AK4520A-VF-X	IC A/D.D/A CONV		
	IC485	TK71340M-W	IC 4.0V REG		
	IC500	HD6433045SV06F	MPU	ﾏｽｸ ﾏｲｺﾝ	
	IC590	AK93C45AF-W	IC		
	K 491	NQR0129-004X	FERRITE BEADS		
	K 492	NQR0129-004X	FERRITE BEADS		
	K 495	NQR0129-004X	FERRITE BEADS		
	K 496	NQR0129-004X	FERRITE BEADS		

BLOCK NO. 05

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	K 521	VQZ0108-006Y	INDUCTOR		
	K 522	VQZ0108-006Y	INDUCTOR		
	K 523	NQR0129-002X	FERRITE BEADS		
	K 524	NRSA63J-0RONYR	RES. C.M	5%	
	L 525	VQP0032-1R0Y	INDUCTOR		
	L 526	VQP0032-1R0Y	INDUCTOR		
	Q 330	2SA1362GR	TRANSISTOR		
	Q 331	DTA114EKA-X	TRANSISTOR		
	Q 332	DTA113ZKA-X	TRANSISTOR		
	Q 333	DTA113ZKA-X	TRANSISTOR		
	Q 400	2SA1363T1(E,F)	CHIP TR.C.M		
	Q 401	2SC2411K(Q,R)TL	CHIP TR.C.M		
	Q 402	DTA113ZKA-X	TRANSISTOR		
	R 300	NRSA63J-0RONYR	RES. C.M	5%	
	R 301	NRSA63J-0RONYR	RES. C.M	5%	
	R 302	NRSA63J-0RONYR	RES. C.M	5%	
	R 303	NRSA63J-122NY	MG RESISTOR	1.2K 5%	
	R 305	NRSA63J-222NY	MG RESISTOR	2.2K 5%	
	R 306	NRSA63J-474NY	RES. C.M	470K 5%	
	R 309	NRSA63J-474NY	RES. C.M	470K 5%	
	R 310	NRSA63J-331NY	RES. C.M	330 5%	
	R 311	NRSA63J-183NY	MG RESISTOR	18K 5%	
	R 312	NRSA63J-103NY	RES. C.M	10K 5%	
	R 313	NRSA63J-104NY	RES. C.M	100K 5%	
	R 314	NRSA63J-133NY	MG RESISTOR	13K 5%	
	R 315	NRSA63J-243NY	MG RESISTOR	24K 5%	
	R 316	NRSA63J-104NY	RES. C.M	100K 5%	
	R 317	NRSA63J-103NY	RES. C.M	10K 5%	
	R 320	NRSA63J-563NY	RES. C.M	56K 5%	
	R 321	NRSA63J-331NY	RES. C.M	330 5%	
	R 322	NRSA63J-331NY	RES. C.M	330 5%	
	R 323	NRSA63J-331NY	RES. C.M	330 5%	
	R 324	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 325	NRSA63J-472NY	RES. C.M	4.7K 5%	
	R 326	NRSA63J-331NY	RES. C.M	330 5%	
	R 327	NRSA63J-331NY	RES. C.M	330 5%	
	R 328	NRSA63J-101NYR	RES. C.M	100 5%	
	R 330	NRSA63J-0RONYR	RES. C.M	5%	
	R 331	NRSA63J-220NY	RES. C.M	22 5%	
	R 336	NRSA63J-104NY	RES. C.M	100K 5%	
	R 337	NRSA63J-1RONY	MG RESISTOR	1.0 5%	
	R 338	NRSA63J-4R7NY	RES. C.M	4.7 5%	
	R 340	NRSA63J-222NY	MG RESISTOR	2.2K 5%	
	R 341	NRSA63J-222NY	MG RESISTOR	2.2K 5%	
	R 342	NRSA63J-222NY	MG RESISTOR	2.2K 5%	
	R 351	NRSA63J-100NY	MG RESISTOR	10 5%	
	R 352	NRSA63J-100NY	MG RESISTOR	10 5%	
	R 353	NRSA63J-105NYR	MG RESISTOR	1.0M 5%	
	R 354	NRVA63D-103NY	MF RESISTER	10K	
	R 355	NRVA63D-103NY	MF RESISTER	10K	
	R 361	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 362	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 363	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 364	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 365	NRSA63J-102NY	RES. C.M	1.0K 5%	

BLOCK NO. 05

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 366	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 367	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 368	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 369	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 370	NRSA63J-104NY	RES. C.M	100K 5%	
	R 371	NRSA63J-103NY	RES. C.M	10K 5%	
	R 372	NRSA63J-103NY	RES. C.M	10K 5%	
	R 375	NRSA63J-103NY	RES. C.M	10K 5%	
	R 376	NRSA63J-104NY	RES. C.M	100K 5%	
	R 377	NRSA63J-684NY	RES. C.M	680K 5%	
	R 378	NRSA63J-332NY	RES. C.M	3.3K 5%	
	R 379	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 380	NRSA63J-105NYR	MG RESISTOR	1.0M 5%	
	R 381	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 382	NRSA63J-151NY	MG RESISTOR	150 5%	
	R 389	NRSA63J-331NY	RES. C.M	330 5%	
	R 391	NQR0265-003X	FERRITE BEADS		
	R 392	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 393	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 394	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 395	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 396	NRSA63J-331NY	RES. C.M	330 5%	
	R 397	NRSA63J-331NY	RES. C.M	330 5%	
	R 401	NRVA63D-123X		12K	
	R 402	NRVA63D-512X	RES. C.M	5.1K	
	R 403	NRSA63J-0RONYR	RES. C.M	5%	
	R 404	NRSA63J-104NY	RES. C.M	100K 5%	
	R 420	NRVA63D-223NY	1ES. C.M	22K	
	R 421	NRVA63D-103NY	MF RESISTER	10K	
	R 422	NRVA63D-223NY	1ES. C.M	22K	
	R 423	NRVA63D-103NY	MF RESISTER	10K	
	R 424	NRVA63D-223NY	1ES. C.M	22K	
	R 425	NRVA63D-103NY	MF RESISTER	10K	
	R 426	NRVA63D-223NY	1ES. C.M	22K	
	R 427	NRVA63D-103NY	MF RESISTER	10K	
	R 428	NRVA63D-223NY	1ES. C.M	22K	
	R 429	NRVA63D-103NY	MF RESISTER	10K	
	R 430	NRVA63D-223NY	1ES. C.M	22K	
	R 431	NRVA63D-103NY	MF RESISTER	10K	
	R 432	NRVA63D-223NY	1ES. C.M	22K	
	R 433	NRVA63D-822X	MF RESISTER	8.2K	
	R 434	NRVA63D-223NY	1ES. C.M	22K	
	R 435	NRVA63D-822X	MF RESISTER	8.2K	
	R 436	NRSA63J-223NY	RES. C.M	22K 5%	
	R 437	NRSA63J-302NY	MG RESISTOR	3.0K 5%	
	R 438	NRSA63J-223NY	RES. C.M	22K 5%	
	R 439	NRSA63J-302NY	MG RESISTOR	3.0K 5%	
	R 451	NRSA63J-103NY	RES. C.M	10K 5%	
	R 452	NRSA63J-682NY	RES. C.M	6.8K 5%	
	R 453	NRSA63J-1RONY	MG RESISTOR	1.0 5%	
	R 454	NRSA63J-1RONY	MG RESISTOR	1.0 5%	
	R 455	NRSA63J-223NY	RES. C.M	22K 5%	
	R 481	NRSA63J-100NY	MG RESISTOR	10 5%	
	R 483	NRSA63J-0RONYR	RES. C.M	5%	
	R 485	NRSA63J-103NY	RES. C.M	10K 5%	

BLOCK NO. 05

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	R 491	NRSA63J-471NY	RES. C.M	470 5%	
	R 492	NRSA63J-471NY	RES. C.M	470 5%	
	R 495	NRSA63J-471NY	RES. C.M	470 5%	
	R 496	NRSA63J-471NY	RES. C.M	470 5%	
	R 501	NRSA63J-105NYR	MG RESISTOR	1.0M 5%	
	R 502	NRSA63J-561NY	MG RESISTOR	560 5%	
	R 503	NRSA63J-103NY	RES. C.M	10K 5%	
	R 504	NRSA63J-333NY	RES.I.M	33K 5%	
	R 505	NRSA63J-4R7NY	RES. C.M	4.7 5%	
	R 510	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 511	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 512	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 513	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 514	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 515	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 516	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 517	NRSA63J-104NY	RES. C.M	100K 5%	
	R 518	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 519	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 520	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 521	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 522	NRSA63J-222NY	MG RESISTOR	2.2K 5%	
	R 523	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 524	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 525	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 531	NRSA63J-103NY	RES. C.M	10K 5%	
	R 532	NRSA63J-103NY	RES. C.M	10K 5%	
	R 533	NRSA63J-103NY	RES. C.M	10K 5%	
	R 534	NRSA63J-103NY	RES. C.M	10K 5%	
	R 535	NRSA63J-103NY	RES. C.M	10K 5%	
	R 549	NRSA63J-0R0NYR	RES. C.M	5%	
	R 551	NRSA63J-104NY	RES. C.M	100K 5%	
	R 552	NRSA63J-104NY	RES. C.M	100K 5%	
	R 553	NRSA63J-104NY	RES. C.M	100K 5%	
	R 554	NRSA63J-104NY	RES. C.M	100K 5%	
	R 555	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 556	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 557	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 558	NRSA63J-102NY	RES. C.M	1.0K 5%	
	R 559	NRSA63J-333NY	RES.I.M	33K 5%	
	R 560	NRSA63J-333NY	RES.I.M	33K 5%	
	R 561	NRSA63J-333NY	RES.I.M	33K 5%	
	R 562	NRSA63J-333NY	RES.I.M	33K 5%	
	R 563	NRSA63J-333NY	RES.I.M	33K 5%	
	R 591	NRSA63J-220NY	RES. C.M	22 5%	
	R 592	NRSA63J-104NY	RES. C.M	100K 5%	
	X 350	NAX0160-001X	CRYSTAL		
	X 500	NAX0159-001X	CRYSTAL		

■Loading Circuit Board

BLOCK NO. 06

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	S003	QSW0472-001	SWITCH		
	CN002	EWS267-F908	SKT WIRE ASSY		

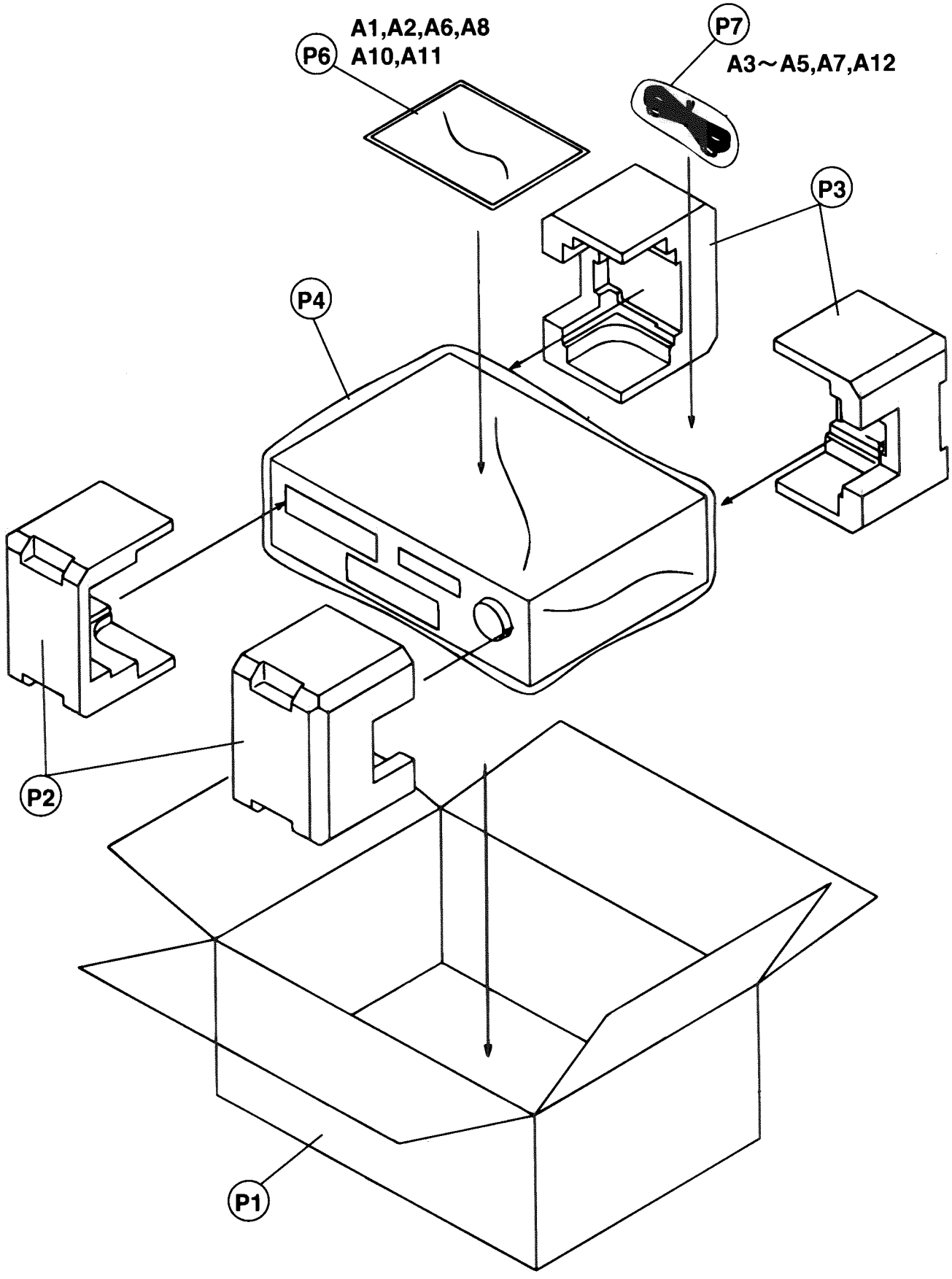
■Switch Circuit Board

BLOCK NO. 07

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	SUFFIX
	S001	QSP2005-E01	PUSH SW.		
	CN001	EWS268-F911	SKT.WIRE ASSY		

Packing Materials and Accessories List

Block No. M 5 M M
Block No. M 6 M M



■Packing Parts List

BLOCK NO. M5MM□□□

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	P 1	LV20026-004A	CARTON		1	B,E,EE,EN	
		LV20026-004A	CARTON		1	U,UB,US,UT	
		LV20026-001A	CARTON		1	J	
	P 2	LV20025-001A	CUSHION(F)		1		
	P 3	LV20025-002A	CUSHION(R)		1		
	P 4	QPC06506515P	POLY BAG	FOR SET	1		
	P 6	QPA04005005P	POLY BAG	FOR INST	1		
	P 7	QPA01402005	POLY BAG	WIRE BATTERY PL	1		

■Accessories Parts List

BLOCK NO. M6MM□□□

⚠	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY	SUFFIX	CLR
	A 1	LVT0009-003A	INSTRUCTIONS		1	E	
		LVT0009-001A	INSTRUCTIONS		1	J	
		LVT0009-002A	INSTRUCTIONS		1	B	
		LVT0009-006A	INSTRUCTIONS		1	EE	
		LVT0009-004A	INSTRUCTIONS		1	EN	
		LVT0009-005A	INSTRUCTIONS		1	U,UB,US,UT	
	A 2	BT-54008-1	WARRANTY CARD		1	B,E,EN	
		BT-51009-3	WARRANTY CARD		1	J	
		BT-52001-4	WARRANTY CARD		1	J	
	A 3	EWP805-001W	REMOTE WIRE		1		
	A 4	QAM0109-001	PLUG-CORD		1		
	A 5	VMP0088-001JW	PIN CORD		1		
	A 6	RM-XU301XU	REMOCON UNIT		1	B,E,EE,EN	
		RM-XU301XU	REMOCON UNIT		1	U,UB,US,UT	
		RM-XU301U	REMOCON UNIT		1	J	
	A 7	R03UPTT/2STS	BATTERY	FOR REMOCON	1		
	A 8	LV30255-006A	SHEET		1		
	A 10	E43486-340B	SAFETY SHEET		1	B	
		BT-20044G	SAFETY SHEET		1	J	
	A 11	BT-20137	SERVICE NETWORK		1	J	
		BT-20071B	SERVICE NETWORK		1	J	
	A 12	V04062-001	AC PLUG		1	UT	
		V04062-002	AC PLUG		1	U,US	

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